Readings In Modern Linguistics

Edited by
Anwar S. Dil

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LINGUISTIC RESEARCH GROUP OF PAKISTAN
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Dedicated to

Dr. Ghulam Yasin Khan Niazi

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PREFACE

Although there exists no academic centre for the systematic study of linguistic science in Pakistan, many scholars, teachers and students have interested themselves for sometime in problems springing from our complex linguistic background. Over the last three years, the Linguistic Research Group of Pakistan has published studies which focus attention on the various language problems which must be solved if national progress in the wider sense, is not to be held back. In this manner the LRGP has given a lead but the systematic and continuing study that is necessary demands resources beyond the modest means of the LRGP.

The magnitude of the work that awaits the proposed Departments of Linguistics in our national universities is clear from what Dr. Baloch says in his Foreword. Let us hope that these Departments, not necessarily very elaborate and ambitious in their set-up, will be established without much delay.

It is in the hope that amongst other things, these articles will assist in stimulating thought as to the best means of meeting the challenge of our language problems, that this volume is offered to the public.

ANWAR S. DIL

August 26, 1964.

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FOREWORD

Modern Linguistics has made considerable progress during the past four decades or so, and linguistic literature, both of pure and applied nature, has become a valuable part of contemporary knowledge. Study of Linguistics has, therefore, a great contribution to make in our multi-lingual society for better procedures of language teaching and greater inter-language understanding.

The Linguistic Research Group of Pakistan was formed in 1961 to promote linguistic studies in general and to develop a tradition of scientific study of Pakistani languages in particular. During the three years of its life, the Group has published very useful books* in the field. This is their fourth publication.

Mr. Anwar Dil who is a Language Specialist at the Education Extension Centre, Lahore, and also the Founder-Secretary of the LRGP, has compiled and edited these books. Mr. Dil received his basic training in Linguistics under the guidance of Professor Charles C. Fries and Professor Robert Lado, at the University of Michigan, Ann Arbor, U.S.A. His work with the Education Extension Centre for West Pakistan and the Institute of Education and Research of the University of the Panjab, brought him in direct contact with language students, teachers, teacher trainers and other personnel in the field. As a result, the selection of the reading material included in this volume is based on his actual try-out experiences with the type of readers for whom this book is intended. The selection is a fairly representative one, having

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**A Directory of Pakistani Linguists and Language Scholars.*

**Pakistani Linguistics (1962)*

**Pakistani Linguistics (1963)*

been made from a wide range of modern linguistic literature which is of special relevance and significance for our country.

In view of the size of this volume and the difficulties involved in copyright procedures, only selected articles by some of the leading authorities in the field have been included in this volume. It is hoped that Mr. Dil will continue his efforts to compile a companion volume subsequently which will enable him to bring together other useful articles which he has already selected for this purpose.

There is an urgent need to promote the study of Linguistics at the college and university levels in Pakistan. Not only the kaelideoscopic pattern of the national and the regional languages and their numerous dialects in the country offers a fertile field for research but also the ever-increasing demand for language teachers in our multilingual society calls for the preparation of specialists in the field. The Linguistic Research Group of Pakistan has done a pioneering work by arousing interest in the subject and providing basic reading materials in the field.

It is hoped that students, teachers and scholars will find this volume of special interest to them. The general readers should equally enjoy reading this book by way of their first introduction to this very important and interesting branch of modern knowledge.

DR. N. A. BALOCH

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July 3, 1964.

Language

H. A. GLEASON, JR.
Hartford Seminary Foundation

As you listen to an unfamiliar language you get the impression of a torrent of disorganized noises carrying no sense whatever. To the native speaker it is quite otherwise. He pays little attention to the sounds, but concerns himself instead with some situation which lies behind the act of speech and is, for him, somehow reflected in it. Both you and he have failed to grasp the nature of the phenomenon. Neither the casual observer nor the usual native speaker can give any real information about a language. To be sure, some people, Americans perhaps more than most others, have decided notions about language. But the ideas held and discussed come far short of giving a complete picture of the language and sometimes have very little relationship to the facts. Even people with considerable education are often wholly unable to answer certain quite simple questions about their language. For most people language is primarily a tool to be used, rather than a subject for close and critical attention.

It is probably well that it is so. Yet there are important human problems into which language enters intimately and on which it exerts such a profound influence that an understanding of its mechanism would contribute materially to their solutions. Moreover, every phase of human activity is worthy of study. Thus, for practical reasons, as well as to satisfy man's innate curiosity, language deserves careful and intelligent study.

Language has so many interrelationships with various aspects of human life that it can be studied from numerous points of view. All are valid and useful, as well as interesting in themselves. Linguistics is the science which attempts to understand language from the point of view of its internal structure. It is not, of course, isolated and wholly autonomous, but it does have a clearly and sharply delimited field of inquiry, and has developed its own highly effective and quite characteristic method. It must draw upon such sciences as physical acoustics, communications theory, human physiology, and anthropology for certain basic concepts and necessary data. In return, linguistics makes its own essential contributions to these disciplines. But however closely it may be related to other sciences, it is clearly separate by reason of its own primary concern with the structure of language.

What then is this structure ? Language operates with two kinds of material. One of these is sound. Almost any sort of noise that the human vocal apparatus can produce is used in some way in some language. The other is ideas, social situations, meanings—English lacks any really acceptable term to cover the whole range—the facts or fantasies about man's existence, the things man reacts to and tries to convey to his fellows. These two, in so far as they concern linguists, may conveniently be labeled expression and content.

The foreigner who hears merely a jumble of sounds has not really heard the language, not even the part of it which we have called expression. All that he has heard is sounds, the material which language uses to carry its message. This is not the domain of the linguist, but that of the physicist. The latter can analyze the stream of speech as sound and learn many things about it. His findings have both theoretical and practical importance ; the designs of telephones, radios,

and much other electronic equipment depends in an essential way upon such findings. They also contribute basic data to linguistics, and to numerous other sciences, including psychology and physiology, as well as to physics itself.

The linguist is concerned with sound as the medium by which information is conveyed. To serve in this way, speech must be something quite different from the jumble of sound apparent to the foreigner. It is, in fact, an organized system or structure, and it is this structure that lies within the subject field of linguistics. The linguist analyzes speech as an orderly sequence of specific kinds of sounds and of sequences of sounds. It is orderly in terms of a very complex set of patterns which repeatedly recur and which are at least partially predictable. These patterns form the structure of expression, one major component of language in the sense that the linguist uses the term.

The native speaker has his attention focused on something else, the subject of the discourse. This may be a situation which is being described, some ideas which are being presented, or some social formula which is being repeated. None of these things are language, any more than are the sounds which convey speech. The subject of the discourse stands on the opposite side and in much the same relationship to speech as do the sounds. The speaker comprehends what he is talking about in terms of an organizing structure. This structure causes him to select certain features for description and determines the ways in which he will interrelate them. It also cuts the situation up into portions in a characteristic way. These selected features, like the sounds mentioned above, also form patterns which recur, and which are at least partially predictable. These recurrent patterns are the structure of content, a second major component of language as the linguist treats it.

Finally, these two structures are intimately related and inter-acting. Parts of the structure of expression are associated in definite ways with parts of the structure of content. The relations between these two complex structures are themselves quite complex. In every language they are different from what is found in every other language. The differences may be profound and extensive, or they may be relatively slight. But in every instance, the two structures are intricate and their relationships quite characteristic.

The native speaker uses this complex apparatus easily and without conscious thought of the process. It seems to him simple and natural. But to a speaker of another of the world's five thousand languages it may present quite a different picture. It may give an impression of being cumbersome, illogical, or even ridiculous. Actually, of course, the strange language is merely different. A true picture of language can only be had by seeing languages more objectively. Such a view will emphasize the immense complexity, the arbitrariness, and the high degree of adequacy for their purposes—features which are shared by all languages in spite of their divergencies.

The dual structure of language can best be made clear by an example. . .

Consider a rainbow or a spectrum from a prism. There is a continuous gradation of color from one end to the other. That is, at any point there is only a small difference in colors immediately adjacent at either side. Yet an American describing it will list the hues as red, orange, yellow, green, blue, purple, or something of the kind. The continuous gradation of color which exists in nature is represented in language by a series of discrete categories. This is an instance of structuring of content. There is nothing inherent either in the spectrum or the human perception of it which would compel its division

in this way. The specific method of division is part of the structure of English.

By contrast, speakers of other languages classify colors in much different ways. In the accompanying diagram, a rough indication is given of the way in which the spectral colors are divided by speakers of English, Shona (a language of Rhodesia), and Bassa (a language of Liberia).

English :

purple	blue	green	yellow	orange	red

Shona :

cipswuka	citema	cicena	cipswuka

Bassa :

hui	ziza

The Shona speaker divides the spectrum into three major portions. Cipswuka occurs twice, but only because the red and purple ends, which he classifies as similar, are separated in the diagram. Interestingly enough, citema also includes black, and cicena white. In addition to these three terms, there are, of course, a large number of terms for more specific colors. These terms are comparable to English crimson, scarlet, vermilion, which are all varieties of red. The convention of dividing the spectrum into three parts instead of into six does not indicate any difference in visual ability to perceive colors, but only a difference in the way they are classified or structured by the language.

The Bassa speaker divides the spectrum in a radically different way into only two major categories. In Bassa there

are numerous terms for specific colors, but only these two for general classes of colors. It is easy for an American to conclude that the English division into six major colors is superior. For some purposes it probably is. But for others it may present real difficulties. Botanists have discovered that it does not allow sufficient generalization for discussion of flower colors. Yellows, oranges, and many reds are found to contribute one series. Blues, purples, and purplish reds constitute another. These two exhibit fundamental differences that must be treated as basic to any botanical description. In order to state the facts succinctly it has been necessary to coin two new and more general color terms, xanthic and cyanic, for these two groups. A Bassa-speaking botanist would be under no such necessity. He would find ziza and hui quite adequate for the purpose, since they happen to divide the spectrum in approximately the way necessary for this purpose.

Now for a simple statement of structure in the expression part of language : The sounds used by English are grouped into consonants and vowels (and some other categories). These are organized into syllables in a quite definite and systematic way. Each syllable must have one or more consonants before the vowel, and one or more after the vowel. These are quite intricate restrictions on the sequences that may occur. Of all the mathematically possible combinations of English sounds, only a small portion are admitted as complying with the patterns of English structure. Not all of these are actually used, though the unused ones stand ready in case they should ever be needed. Perhaps some day a word like ving may appear in response to a new need. *Shmoo* was drawn out of this stock of unused possibilities only a few years ago. But *ngvi* would be most unlikely : it simply is nót available as a potential English word, though it contains only English sounds.

Six of these permissible sequences of sounds are somehow associated with the six portions into which English language-habits structure the spectrum. These are the familiar red, orange, yellow, green, blue, purple. This association of expression and content is merely conventional. There is no reason why six others could not be used, or why these six could not be associated with different parts of the spectrum. No reason, that is, except that this is the English-language way of doing it, and these are conventions to which we must adhere reasonably closely if we are to be understood. Sometime in the past history of the language, these conventions became established and have persisted with only gradual changes since. In their ultimate origins, all such conventions are the results of more or less accidental choices. It is largely fortuitous that the spectrum came to be so divided, that the specific words were attached to the colors so distinguished, or, indeed, that the sounds from which they were formed were so organized that these words were possible. These irrational facts, with many others like them, constitute the English language. Each language is a similarly arbitrary system.

The three major components of language, as far as language lies within the scope of linguistics, are the structure of expression, the structure of content, and vocabulary. The latter comprises all the specific relations between expression and content—in the familiar terminology, words and their meanings.

Vocabulary comes and goes. It is the least stable and even the least characteristic of the three components of language. The portion of the vocabulary which changes most freely is sometimes referred to as "slang". But even staid and dignified words are constantly being created and continually passing out of active use, to be preserved only in literature which is dated by their very presence. While certain types of words are more

transient than others, none are absolutely immortal. Even the most familiar and commonly used words, which might be most stable, have a mortality rate of about twenty percent in a thousand years.

Moreover, in the life history of an individual speaker the birth and death of words is very much more frequent than in the language community as a whole. Every normal person probably learns at least three words every day, over a thousand a year, and forgets old ones at an appreciable but lower rate. This figure must be a minimum, because most people have total vocabularies which could only be reached through even more rapid acquisition of vocabulary during at least part of their life.

We have no comparable method by which the rate of change of content structure can be estimated. The learning of new concepts, does of course imply certain minor changes. But it is quite evident that change rarely touches the most basic features in any given language. With regard to the structure of expression the facts are clearer. Few, unless they learn a second language, will add, subtract, or change any of their basic sound patterns after they reach adolescence. Grammatical constructions may increase, but at a rate much slower than the increase of vocabulary. Vocabulary is indeed the transient feature of language.

In learning a second language, you will find that vocabulary is comparatively easy, in spite of the fact that it is vocabulary that students fear most. The harder part is mastering new structures in both content and expression. You may have to free yourself from the bondage of thinking of everything as either singular or plural. Perhaps the new language will separate content into singular, dual, and plural (here meaning "three or more"). Or perhaps the new language will not give routine consideration to the matter. English speakers can never make a statement without saying something about the number

of every object mentioned. This is compulsory, whether it is relevant or not. In Chinese, objects are noted as singular or plural only when the speaker judges the information to be relevant. The Chinese experience suggests that it actually seldom is, for that language operates with only occasional references to number.

You will have to make similar changes in habits of thought and of description of situations in many other instances. You may, for example, have to learn to think of every action as either completed or incomplete, and to disregard the time of the action unless it has special relevance. The organization of thinking and perception may extend much deeper than such changes. In some languages, situations are not analyzed, as they are in English, in terms of an actor and an action. Instead the fundamental cleavage runs in a different direction and cannot be easily stated in English. Some of these divergencies between languages have been described by Benjamin L. Whorf in a series of papers which have been reprinted under the title: *Four Articles on Metalinguistics*. Every student of linguistics or languages can profit from the reading of these articles.

You will also have to reorganize your habits of making and hearing sounds. You will have to discriminate between sounds that you have learned to consider the same. You will find that others, in clear contrast in English, function as one, and you will have to learn to respond to them as to one sound. Patterns which seem impossible will have to become facile, and you will have to learn to avoid some English patterns that seem to be second nature.

The most difficult thing of all, however, is that these profound changes will have to become completely automatic. You will have to learn to use them without effort or conscious attention. In this learning process constant disciplined practice

is essential. Special ability may be helpful, but probably much less so than is popularly supposed. An understanding of the basic principles of language structure—that is, the results of modern linguistic research—while not indispensable, can conrtibute in many ways.

As we listen to a person speaking our native language we hear not only what is said, but also certain things about the speaker. If he is an acquaintance, we recognize him. If not, we identify him as male or female and perhaps obtain some idea of his age, his education, and his social background. A person's voice serves at least two functions in communication. One is linguistic, in that it serves as the vehicle of the expression system of language. The other is non-linguistic, in that it carries information of a quite different sort about the speaker.

This distinction is made, at least roughly, even by the unsophisticated. If we are told to REPEAT exactly what another says, we will duplicate (provided our memory serves us adequately) every feature which is included in the language expression system. We can do that, if it is our own language, even without understanding the content. In repeating we will make no effort to reproduce anything beyond the linguistically pertinent features. If, however, we are asked to MIMIC another, we attempt to reproduce not only the linguistic features, but every discernible characteristic. Few can mimic with any degree of success, whereas every normal native speaker can perhaps with a little practice, repeat exactly up to the limit imposed by his memory span.

The most basic elements in the expression system are the *phonemes*. These are the sound features which are common to all speakers of a given speech form and which are exactly reproduced in repetition. In any language, there is a definite and usually small number of phonemes. In English there are

forty-six. Out of this limited inventory of units, the whole expression system is built up. In many respects the phonemes are analogous to the elements of chemistry, ninety-odd in number, out of which all substances are constructed.

The phoneme is one of those basic concepts, such as may be found in all sciences, which defy exact definition. Yet some sort of working characterization is necessary before we go on. The following is hardly adequate beyond a first introduction to the subject, but will make it possible to proceed with the analysis and enumeration of the phonemes of English.

With this in mind, we may define a *phoneme* as a minimum feature of the expression system of a spoken language by which one thing that may be said is distinguished from any other thing which might have been said. Thus, if two utterances are different in such a way that they suggest to the hearer different contents, it must be because there are differences in the expressions. The difference may be small or extensive. The smallest difference which can differentiate utterances with different contents is a difference of a single phoneme. This description is best illustrated by a full-scale application in the presentation of the phonemic system of a language....

There are two things about phonemes that must be explicitly pointed out in anticipation of any such presentation :

Phonemes are part of the system of one specific language. The phonemes of different languages are different, frequently incommensurable. It is for this reason that a foreigner hears only a jumble which he cannot repeat. The sounds of the unfamiliar language do not fit into his phonemic system, and so he can comprehend no order in a simple utterance. If anything which is said about the phonemes of one language happens to apply to those of another, we must regard it as fortuitous.

Phonemes are features of the spoken language. Written language has its own basic unit, the grapheme. Something will be said about this later. If, of necessity, written words are cited as illustrations, it must be constantly borne in mind that the written form is not, and cannot be, an illustration of a phoneme. Instead, it is the spoken form which the written form is expected to elicit which illustrates the phoneme under discussion. This inevitably introduces a major difficulty into the presentation. The illustrative words have been selected with the intention that they should be as generally as possible pronounced by all Americans in the same way. Undoubtedly this principle of selection fails in some instances because of dialect and individual peculiarities of the writer and the reader. Such instances will not vitiate the argument. For some Americans other examples might be needed, but examples can be found which will lead to the same results.

The thinking that most Americans do about language is almost exclusively concerned with written English. A written language is, of course, a valid and important object of linguistic investigation. It can, however, easily mislead the unwary. Most of the minunderstandings which Americans have about language arise from a failure to keep clearly in mind the nature and limitations of a written language.

A written language is typically a reflection, independent in only limited ways, of spoken language. As a picture of actual speech, it is inevitably imperfect and incomplete. To understand the structure of a written language one must constantly resort either to comparison with the spoken language or to conjecture. Unfortunately, recourse has been too largely to the latter. Moreover, conjecture has been based not so much upon an intimate knowledge of the ways of languages in general (the results of descriptive linguistics) as to a priori considerations of supposed logic, to metaphysics, and to simple prejudice.

While logic and metaphysics are important disciplines and can make significant contributions to an understanding of language, the customary manner of applying them has redounded neither to their credit nor to the elucidation of language structure. Linguistics must start with thorough investigation of spoken language before it proceeds to study written language. This is true of languages with long histories of written literature, such as English, no less than those of isolated tribes which have never known of the possibility of writing.

The second basic unit in the expression system is the *morpheme*. This again cannot be exactly defined...For the present, however, let us characterize a morpheme as follows : It is the unit on the expression side of language which enters into relationship with the content side. A morpheme is typically composed of one to several phonemes. The morpheme differs fundamentally from the phoneme, which has no such relationship with content. That is, phonemes have no meanings ; morphemes have meanings.

The simpler words of English are morphemes. Other words consist of two or more morphemes. Like the phonemes, the morphemes enter into combinations in accordance with definite and intricate patterns. The expression structure is merely the sum of the patterns of arrangement of these two basic units.

Using the phoneme and the morpheme as their basic units, linguists have been able to build a comprehensive theory of the expression side of language, and to make detailed and comprehensive statements about the expression systems of specific languages. This is what is ordinarily called *descriptive linguistics*. It is the basic branch of linguistic science. Others are *historical linguistics*, dealing with the changes of languages in time, and *comparative linguistics*, dealing with the

relationship between languages of common origion. Descriptive linguistics is conventionally divided into two parts. *Phonology* deals with the phonemes and sequences of phonemes. *Grammar* deals with the morphemes and their combinations.

In some respects linguistics has developed more precise and rigorous methods and attained more definitive results than any other science dealing with human behavior. Linguists have been favored with the most obviously structured material with which to work, so this attainment is by no means due to any scientific superiority of linguists over other social scientists. It is also the direct result of the discovery of the phoneme, a discovery which allows the data to be described in terms of a small set of discrete units. Within a given language, a given sound is either a eertain phoneme or it is not ; there can be no intergradation. This fact eliminates from linguistics a large measure of the vagueness and lack of the precision characteristic of most studies of human behavior. It would be presumptuous to claim that this advantage has been thoroughly exploited by linguists, but it is certainly fair to say that in some places, linguistics has achieved an appreciable measure of scientific rigor and has the foundation for further development in this regard.

The chief evidence for the high order of development of linguistics as a science lies in the reproducibility of its results. If two linguists work independently on the same language, they will come out with very similar statements. There may be differences. Some of these differences will be predictable. Very seldom will any of the differences be deep-seated. Usually it will be quite possible to harmonize the two statements and show that by simple restatements one result can be converted into the other. That is, the two results will have differed largely in inconsequential ways, often only in external form.

The content side of linguistics has developed much less rapidly and to a very much less impressive extent than the study of expression. Indeed, it cannot as yet justifiably be called a science. Undoubtedly this has been a source of frustration in linguistics as a whole. One of the greatest shortcomings of descriptive work with the expression aspect of language has been a lack of understanding of the relationships between expression and content, and the inability to use the analysis of content in attacking related problems in expression. Here is the great frontier in linguistic knowledge on which we may look for progress in the next decades.

There have been three reasons for the neglect of the content side. First, linguists have been late in comprehending the real significance of the two-sided nature of language. Their attention has been diverted from this basic problem by the great advances being made within the analysis of expression.

Second, there has been no way to gain access to the content structure except through the expression structure. This requires an inferential method which has not appealed to linguists busy with building a highly rigorous method for the handling of more directly observed data. Content has therefore had an inferior status in the eyes of linguists.

Third, the content, apart from its structure, has not been amenable to any unified study. The substance of content is, of course, the whole of human experience. Thousands of scientists have labored, each in some one of numerous disciplines, in elucidating this mass of material. But there is no one approach which can comprehend the whole and so serve as a starting point for comparison of the different structures which can be imposed upon it. Only isolated portions of the content system can as yet be studied as structure imposed on a

measurable continuum of experience. The examples of structuring of color concepts discussed above suggest the possibilities and make the lack of further opportunities for comparison the more tantalizing.

In contrast, the expression plane starts with much simpler materials. The sounds producible by the human voice can be studied comprehensively by several approaches. Two of these have reached the degree of precision which makes them useful to linguistics : *articulatory phonetics*, a branch of human physiology, and *acoustic phonetics*, a branch of physics . It is hard to imagine the scientific study of the expression aspect of speech attaining anywhere near the present degree of development without the aid of phonetics. The structure can be systematically described only because the underlying sounds can be accurately described and measured.

The Science of Linguistics

JOHN B. CARROLL
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Linguistics is the science of language ; hence we had better start by trying to define language.

Suppose we go to some remote corner of the world and observe two persons conversing with one another. We ask ourselves whether these persons are speaking the same language. (This need not be the case ; on a visit to the conclaves of the United Nations we happened to observe one delegate speaking in French and another replying in Russian). We make a tape recording of the sounds we hear, and upon careful study of this recording it turns out that the sounds uttered by the two persons have at least some similarities. Though many of the sounds may seem strange to our ears, we can learn to recognize, fairly well, the vowels and consonants which occurred in the speech of our subjects. Suppose we find that the various vowels and consonants we recognize sound approximately the same no matter which one of our subjects is talking, and that they occur on the average with about the same frequencies. This would be partial evidence for concluding that the two persons are speaking the same language. But it is not enough : they might perchance be speaking two different languages with the same systems of elementary sounds (though this would be a rare case). We analyze our tape recording further and find that the sounds often occur in similar sequences ; if we listen carefully to the breaks between these sequences we might conclude that our subjects use many "words" in common, and we would then

have further evidence that they are speaking the same language. We could go on in this way, making increasingly detailed analysis. We should want to study how the longer sequences of sounds are put together; we would try to discover certain constancies or invariances in the structure of our subjects' utterances. We would probably have to go back to our subjects for further information. We might, for example, be able to get them to give us verbal responses to a number of common objects and situations, with a view to seeing whether their responses are similar. If we could find a high degree of similarity in their verbal responses, or at least a large number of common traits in their utterances, we would probably be justified in concluding that they are speaking the same language.

Let us consider several things about this observation.

First, the mere fact that our subjects seem to "understand one another" is no guarantee that they are speaking the same language. Mutual intelligibility is a necessary but not a sufficient condition for such a conclusion. We might have a situation in which the speakers are using two languages, but in which each speaker understands the language of the other. Our conclusion that the same language is being used must emerge from our finding that a high degree of similarity, in some sense, is manifested in the utterances of the two speakers.

Second, the utterances do not have to be similar in all respects. Even the elementary sounds which we ordinarily call vowels and consonants may vary slightly in their acoustical properties, and certainly the total utterances of the two speakers will rarely be found to be even approximately parallel. It is only when we find that these utterances are in most respects structured according to the same self-consistent system that we can conclude that they are in the same language.

Third, we might find that the utterances of one or of both our speakers occasionally depart from the self-consistent system we have discovered. We might suspect, in such a case, that our speakers are occasionally making "quotations" from still another language, just as we do when we use a French or Latin phrase in our English speech, or when we utter a foreign surname (like Turgenev, for example, particularly if we give it the Russian pronunciation) which does not pattern itself like English names. There would be enough self-consistency in the bulk of the utterances to enable us to spot such "quotations" from another language and lay them aside.

Fourth, let us notice that the discovery that two speakers are using the same language does not imply that we would necessarily find any other human beings using this language. Our two subjects might have developed this language themselves, or they might be the last remaining speakers of a moribund language. Whatever the case, the system we have discovered would still be a language. As a matter of fact, everyone knows of languages without speakers currently living, but ancient Greek or ancient Hittite can still be called languages.

Finally, we might ask ourselves whether our two subjects are merely uttering structured nonsense. The test of this would be to see whether they verbally respond in any similar and consistent way to certain objects and situations, whether their verbal responses represent discriminations between various aspects of their physical environment, and finally whether the speakers are in any sense able to control differentially each other's behavior in ways depending on their use of structured verbal responses. If these thinge are found to be the case, we can say that the language common to the two speakers has a symbolic, communicative function. A structured system of verbal responses would not be a language unless it has a symbolic, communicative function. Of course, there is hardly any reason for such a

system to be structured unless it is to be used for communication.

One may rightly ask why we have introduced two speakers in our illustration. It is true that a language can be a system possessed by only one person. (He could have invented it for his own purposes, assigning his own arbitrary symbolic functions of the language.) Furthermore, it is possible to make an analysis of a language system solely on the basis of the utterances of a single informant; in fact, this has often been done. Nevertheless, there is much reason to believe that the symbolic function of a language arises only by social facilitation—that the elements of a language system come to have symbolic functions only by virtue of the discriminative verbal responses of two or more human beings who desire to influence each other's behavior in various ways. The users of a common language system constitute the speech community of that language system to correspond to a certain speech community, represented in the present illustration by our two speakers. There can of course be such a thing as a speech community consisting of one speaker, but this is usually a historical residue from a larger speech community. Even the man who invents a new artificial language does so by virtue of the verbal habits he has acquired in a larger speech community.

A language is never perfectly uniform throughout a speech community of two or more persons; as the speech community gets larger, there is likely to be less uniformity. Indeed, each member of a speech community may be said to possess his own personal variety of the language system. A single individual will often possess several idiolects, to be used as the situation demands for example, one for talking to contemporaries and one for talking to children. (Of course, such idiolects would have their parallels in other speakers.) Furthermore, the various members of the speech community will not possess all the linguistic items which properly belong to the language; for

example, large numbers of people in the English speech community do not use or even recognize the meanings of many words which are used by the educated classes or by members of specialized trades and occupations. All these items, however, are structured according to the patterns which are characteristic of the English language. The learned word 'psychoanalytic', for example, contains sounds which are characteristic of other, more common English words; its syllabic structure and its accentuation follow usual patterns; and from the standpoint of word order it falls into sentence positions at least partially similar to those of numerous common words like good, proper, lovely, etc. The abstracted system of common traits in the idiolects of all members of a speech community, then, is what we call a language. If we find certain members of a speech community whose idiolects resemble each other rather more than they resemble those of other members of a speech community, we say that their system of common linguistic traits constitutes a dialect.

We are now ready to essay a formal definition of a language, if we bear in mind the various issues raised in the foregoing discussion.

A language is a structured system of arbitrary vocal sounds and sequences of sounds which is used, or can be used, in interpersonal communication by an aggregation of human beings, and which rather exhaustively catalogs the things, events, and processes in the human environment. The sounds and sequences of sounds are arbitrary only in the sense that they have no inherent or necessary connections with the things to which they are said to "refer," or to the situations or contexts in which they are used—these connections having been established only by specific processes of learning.

It will be observed that this definition of language excludes nonvocal acts such as gestures and pantomimic responses.

nonvocal acts such as gestures and pantomimic responses. Though such acts may often be structured somewhat as vocal responses are, and though they may perform a communicative function which parallels or supplements that of verbal acts, they are as a matter of definition not included in language. (We may, however, speak of gesture language by a transferred meaning of the term language). Our definition also excludes any system of written or printed symbols which may be used to represent the possible utterances of a language. (Here we must speak of the system of writing language X ; particularly to be avoided is any suggestion that a language may be equated to a system of writing).

We reserve the term language, as a general rule, to refer to a system which "rather exhaustively catalogs the things, events, and processes in the human environment " This restriction excludes such special "languages" as the "language" of chess—a system which permits one to communicate only in reference to the moves of pieces on a chessboard. In contrast, natural languages like English, French, Chinese, and even artificial languages like Esperanto, permit one to communicate with reference to nearly everything in one's environment and experience. The number of truly ineffable things is surely small; perhaps there is nothing that cannot be formulated in language in some some manner.

If we define a semeiotic system as any system of signs which can be used in some communicative function—however broad or restricted that function may be — we see that a language, as we have defined it above, is merely one type of semeiotic system, but a most important type. Gesture and writing constitute other types

of semeiotic systems, even though they may be, and usually are connected intimately with language. Systems of mathematical notation and the "language" of chess constitute still other examples of semeiotic systems.

We can now say what is meant by linguistics by stating that it is the scientific enterprise of investigating the languages and dialects which are in use, or have been used, by various speech communities throughout the world. The analysis of a language system is possible only by examining and comparing actual manifestations of language as represented by samples of speech or text, but the end result is a description of the "linguistic code" which more or less uniformly manifests itself in all verbal communications or messages observable in the speech community. The distinction between the language system (la langue) and the manifestation of that system in the speech of particular individuals (la parole) was emphasized by the Swiss linguist Ferdinand de Saussure (1916), who pointed out that linguisics is concerned primarily with la langue, the language system.

The subject matter of linguistics, so defined, has far-reaching ramifications, but for several reasons the field has had to be kept within certain confines. And there are inevitably certain matters of emphasis within this field of investigation. It must be made clear that we are here describing the field of linguistics as it has actually developed. A number of linguistic scientists have indicated possible expansions of the field, many of these overlapping considerably with allied fields such as philosophy, psychology, and anthropology, but such expansions must be

regarded as justified only if their development depends inherently upon the concept of structure which is central in scientific linguistics.

First of all, the linguist limits his field of inquiry by refusing to be concerned except in a rather indirect way, with the content of the communication that is, "what is being talked about". The linguist is not interested in what is communicated; he is interested primarily in the vehicle of communication, that is, the language system. If he became concerned with the content of communication, he would in effect be concerned with the totality of human knowledge.

Secondly, the linguist limits his field by refusing to inquire into the mechanisms, psychologocial or otherwise, whereby human beings are able to use linguistic symbols ; nor does the linguist ask about their motivations in making any particular utterance. To put the matter in common-sense terms, the linguist is not interested in what an individual is talking about or why he wants to talk at all but only in the fact that what is said is cast in a certain culturally determined mold, that mold being the language of the individual's speech community.

A third limitation which the linguist usually imposes on himself arises from the way he defines language. Of the various types of communication which are observed in human societies communication by sequences of speech sounds, by visual symbols, by signaling and gesturing, or by other means — the linguist has concluded that the most important for his purposes is communication by sequences of speech sounds. Other types of semeiotic systems have been regarded as either primitive, "non-structured" sets of signals, or as systems which have developed out of, and by virtue of, speech systems Thus, the linguist is likely to become concerned with the written or

orthographic accompaniments of a living language system, for example, only after the phonetic characteritics of the spoken language have been thoroughly investigated. Even when a linguist is investigating the structure of a "dead" language which can be studied only from written records, he tries to discover what the spoken form of the language must have been and draws on principles and results developed in connection with the study of living languages.

Since the linguist is first of all a social scientist, he is not immediately concerned with normative aspects of communication. He does not try to evaluate how things should be said, what grammatical constructions should be used, or how words should be pronounced. He only observes the way people actually say things, the grammatical constructions which they actually use, and the way they actually pronounce words. His interest in prescribing norms extends only to suggesting how greater stability and efficiency of communication may be achieved in a linguistic system.

The narrowing of attention to language as a system of spoken communication may have been unfortunate, in that the study of gesture and other nonlinguistic semeiotic systems related to language has thus far been slighted. The study of spoken communication systems is in itself a tremendous task and linguists may perhaps be excused for not taking full account of other forms of communicative behavior.

Nevertheless, throughout the modern era of scholarship, writing systems have received considerable attention. It was early realized that systems of written symbols may have a status and structure of their own, in some ways dependent on the spoken language system, in other ways independent of it. It is

only in recent years, however, that renewed emphasis has been placed on this notion ; examination of a recent article by Bolinger (1946) will give some idea of the possibilities of investigating writing systems from this standpoint. While the study of vocal sounds plays a very large role in language investigations, the study of writing systems is therefore certainly not precluded in linguistics, if only because of the close parallels between writing and linguistic systems. This branch of linguistics has been termed graphemics by some linguists, and graphonomy by others (Hockett, 1951). Gelb (1952) has written an important work on the genetic stages manifested by writing systems, and Dringer's (1948) study of the alphabet is already regarded as a classic.

Studies of gesture and other semeiotic systems are also not precluded in linguistics, particularly when their relations to spoken language responses are investigated. The methods of linguistics can be carried over to such studies in a surprisingly detailed manner, as has recently been shown by Birdwhistell (1952) in his studies of what he calls kinesics, which is equated to the study of all nonvocal bodily movements which may play a part in communication.

Essentially, linguistics is a sort of logical calculus, although the analogy must not be pushed too far. It is concerned with the identification of linguistic symbols, with the discovery of the ways in which these symbols can be arranged in a temporal sequence, and to some extent with the conditions under which these symbols are used in communication. In some branches of linguistics, these symbols and their arrangements are also studied from a historical point of view.

The central concept in linguistic analysis is structure, by which is meant the ordered or patterned set of contrasts or oppositions which are presumed to be discoverable in a language,

whether in the units of sound, the grammatical inflactions, the syntactical arrangements or even the meanings of linguistic forms.

Although the primary business of linguistics is to describe language structures and trace their development from a historical and comparative point of view, linguistics is also an explanatory science. Linguists wish to determine why sounds and meanings change and how linguistic structures develop. They are concerned also, to the extent that their data may be relevant, with some of the broader issues about language in general, such as the origin of language, the effects of language on behavior, and the relation between language and culture. They desire to arrive at a number of general statements about language as a phenomenon of human society, and to discover satisfactory means for classifying and typing language structures. Some of these broader issues will be discussed in this chapter; others will be treated in later chapters as the primary concerns of other disciplines.

Two classical treatments of linguistics from the standpoint of the American school (if we may speak of a number of loosely interreletated approaches as a "school") are Sapir's *Language* (1921) and the book with the same title by Bloomfield (1933). The chapter headings in Sapir's book are are follows : Introductory : Language Defined ; The Elements of Speech ; The Sounds of Language ; Form in Language : Grammatical Processes ; Form in Language : Grammatical Concepts ; Types Linguistic Structure ; Language as a Historical Product : Drifts ; Language as a Historical Product : Phonetic Laws ; How Languages Influence Each Other ; Language Race, and Culture ; Language and Literature. Bloomfield's book covers a similar scope but it is a more systematic and modern treatment. For the advanced student, Harris's• *Methods in Structural Linguistics* (1951) provides the most comprehensive exposition of

contemporary analytic techniques in America ; there have, of course, been many striking methodological developments since the publication of Bloomfield's book. Other general works to which the reader may be referred are Sturtevant's *Introduction to Linguistic Science* (1947), Bloch and Trager's relatively brief *Outline of Linguistic Analysis* (1942), and R A. Hall, Jr.'s popularized exposition *Leave Your Language Alone !* (1950). L.H. Gray's *Foundations of Language* (1939) is written primarily from the point of view of historical linguistics, with relatively little attention to descriptive linguistics. Among the important general works and texts which have appeared abroad are the following: Ferdin and de Saussure : *Cours de Linguistique Generale* (1916); Antoine Meillet : *Linguistique Historique et Linguistique Generale* (1921-1938); Jespersen : *Language, Its Nature, Development and Origin* (1922); Firth : *The Tongues of Men* (1937); and Tagliatvini : *Introduzione alla Glottologia* (1949). Ullmann's popularly written *Words and Their Use* (1951) is a useful introduction to semantic problems of language; his *Principles of Semantics* (1951) is a more comprehensive treatment. A generaly sound, though brief, account of linguistics written by one who is not himself a technical linguist is McGalliard's essay in Forester's *Literary Scholarship* (1941).

The History of Linguistics—

It is an often-stated truism that the history of almost any major intellectual development in Western culture can be traced back to the Greeks of classical times, and this is the case in linguistics.

Early Greek philosophers were concerned with the question of whether language exists in the very nature of things and

therefore is fundamentally regular and logical, or whether it is simply an arbitrary set of symbols with frequent irregularities and logical faults. Despite Socrates' able discussion of the latter view, as recorded in Plato's *Cratylus*, the former view seemed to have prevailed. Several Greek grammarians, notably Dionysius Thrax, Apollonius Dyscolus, and Herodian, developed descriptive grammars of Greek. Unfortunately these works were sometimes colored by an undue emphasis on a philosophical interpretation of linguistic phenomena and a reverence for Greek as an ideal and fundamentally logical language. Latin grammarians, taught by the Greeks, took over, in the main, the models provided them by Greek grammar, sometimes describing Latin in the same categories even when these categories did not exist in Latin. This is the sort of traditional grammar which incidentally, has come down to the present day and influenced present-day teaching. In English grammars used in our schools not so long ago, it is possible to find such a declension as the following:

Nominative	"the man"
Genitive	"of the man"
Dative	"(to) the man"
Accusative	"the man"
Ablative	"from the man, by the man, etc."

The categories represented by such a declension have little validity in English.

In about the third century B.C., or earlier, a remarkable development took place in India, quite independently of the work of the Greek grammarians. A Hindu grammarian,

Panini; performed the feat of writing a purely descriptive, nonphilosophical account of the Sanskrit language. How much scholarly work must have preceded this feat, we do not know, but Panini's grammar is still regarded as one of the most comprehensive descriptive grammars of any language. It had only indirect influence on the development of Western linguistics until Sanskritist scholars raised it to a position of eminence in the nineteenth century (Bopp, 1816; Bohtlingk, 1887).

In Western culture the study of language proceeded in a relatively unscientific way through the Byzantine era, the period of medieval scholasticism, and even into the days of the Renaissance and the Reformation. Latin replaced Greek as the ideal language, a thing God-given and to be revered. Language was an object of study by philosophers, who advanced what now seem fantastic theories of the origin of language such as the "bow-wow" and "pooh-pooh" theories. The "bow-wow" theory, for example, proposed that language began in man's attempt to imitate animals. During this prescientific period, attempts were made to trace the origin of particular words. Word etymologies were proposed in a rather capricious fashion. When the study of Hebrew and Arabic came into vogue in the late Renaissance, a serious attempt was made to show that various words in modern languages were derived from Hebrew. Such an attempt may not have seemed unreasonable at that time, in view of the validity that was then attached to Biblical writings which said that Noah's sons peopled the world, but what the modern linguist objects to in these early efforts is their unscientific procedure. Such etymological fantasies have their parallels even in recent times ; the writer recalls having seen a book, published in the early twentieth century, which proposed that the Maya language of Yucatan shows remarkable similarities to Hebrew, hence suggesting that the Maya people were descended from one of the lost tribes of Israel. Capricious

and unscientific etymologizing seems to be a perennial habit of the human race. The most recent example of pseudo science in etymology is a book by Samuel Reiss : *The Rise of Words and Their Meanings* (1950), which purports to show that all words of all languages have an underlying kinship.

The era of discovery and exploration brought new knowledge about the languages of the world. Travellers and missionaries wrote grammars and dictionaries of languages they found in Africa, America, and other parts of the world. There was no science of linguistics, or even of articulatory phonetics, to aid them in recording and describing these strange languages. Some of these layman-linguists did remarkably well, considering the materials available to them. Jonathan Edwards's (1788) observations on the Indian languages of Massachusetts are still, *faute de mieux*, useful material for the present-day student of Algonkian linguistics. Around the turn of the nineteenth century there appeared several collections of oddly assorted linguistic materials from the four corners of the globe. As a linguistic curiosity, we may cite the treatise which appeared in the year 1806-1817 under the title *Mithridates*, by Adelung and Vater, which contained the Lord's Prayer in nearly 500 languages.

Despite the panoply of material which was now at hand, few scholars up to the end of the eighteenth century had begun to perceive the possibilities of making any careful scientific examination of these data. It remained for Sir William Jones, in an address delivered in 1786, to point out the possible existence of a great family of Indo-European languages, including Greek, Latin, Sanskrit, Germanic, and Celtic branches. This suggestion of Jones was soon followed by the scholarly work of

Bopp, Rasmus Rask, Grimm, and Pott in the early nineteenth century. That century was the heyday of historical comparative linguistcis, a period which began with the formulation of what are known as Grimm's laws and culminated in the publication of Brugmann and Delbruck's *Outline of the Comparative Grammar of the Indo-European Languages* (1886-1900). The latter work, at the time of its publication, may have seemed to have left few stones unturned in the domain of Indo-European comparative linguistics. Even today, however, Indo-European studies constitute a relatively fertile field, for at least two reasons : (a) recent developments in scientific methodology make it possible to clarify or revise earlier conclusions, and (b) recent archaeological and other discoveries have brought to light new materials bearing on the Indo-European languages, for example, materials in two varieties of Tocharian (Central Asia) and in Hittite and other early languages of Asia Minor.

Concurrently with nineteenth-century studies of the Indo-European language family, and not intimately related to them at all, a philosophical-descriptive stream of studies emerged. Western scholars were for the first time exposed to the descriptive methods of the Hindu grammarian Panini, and, influenced either directly or indirectly by Panini, began to produce descriptive and historial studies of a variety of non-Indo-European languages (Friedrich Muller, 1876-1888; Finck, 1910). Significant general treatises on language were written by von Humboldt (1836-1839), Steinthal (1860), and von der Gabelentz (1891). The psychological study of language was given an impetus by Wundt with the publication of his treatise on langage, as the first part of a series of volumes on social psychology (1900-1909). Toward the middle of the nineteenth century, the first systematic treatments of articulatory phonetics appeared,

and the physicist and psychologist von Helmholtz (1863) may be regarded as one of the founders of acoustic phonetics. Kempelen (1791) and Willis (1830) are two other men who deserve to be mentioned in connection with early phonetic studies.

The development of any area of study is a continuous process. In few instances do there occur any great spurts or marked turning points. It is certainly difficult to find such turning points in linguistics. Nevertheless, one gets the impression that the close of the nineteenth century marked the end of a long chapter of linguistic science and paved the way for the development of linguistic science in the twentieth century. This was true both in America and in Europe. Perhaps Bloomfield has best summarized the status of linguistics at the end of the nineteenth century: "The merging of these two streams of study, the historical-comparative and the philosophical-descriptive, has made clear some principles that were not apparent to the great Indo-Europeanist of the nineteenth century, as represented, say, by Hermann Paul. All historical study of language is based upon the comparison of two or more sets of descriptive data. It can be only as accurate and only as complete as these data permit it to be" (1933, p. 19). The European linguist who best formulated the methodology of descriptive linguistics as it had developed up to his time and who was most influential among later students was Ferdinand de Saussure, whose lectures were assembled by his students and published under the title *Course de linguistique Generale* (1916).

Toward the end of the nineteenth century, there was advanced and developed a principle of linguistic analysis which

has made possible the refined descriptions of language which are now the rule. This concept was that of the phoneme. The two men primarily responsible for the original development of the concept were the Russian linguists Baudouin de Courtenay and his student Kruszewski (1881) ; the subsequent developments took place largely among linguists of the so-called Prague circle (Jakobson, 1928; Turbetskoy, 1939). We shall look at the concept of the phoneme later on, indicating its importance for linguistic analysis and attempting to demonstrate that it has an application which goes beyond the identification of the elementary distinctive sounds of a language—the sphere in which it was originally conceived.

The tradition of American linguistics may be said to have started with William Dwight Whitney, who lived from 1827 to 1894 and was Professor of Sanskrit at Yale College. His principal work, *Language and the Study of Language* (1867) and *The life and Growth of Language* (1874), have had wide influence both in America and in Europe, and are well worth reading even today.

It remained for European-trained Franz Boas of Columbia University to set the stage for the development of a modern linguistic science in America. From 1897 to 1908, Boas collected materials on American Indian languages for a revision of Powell's *Introduction to the Study of Indian Languages* (Powell, 1880); the resulting volumes, *Handbook of American Indian Languages* (Boas, 1911-1922) contained a magnificent introduction which is still regarded as a remarkably acute discussion of the problems of descriptive linguistics.

The history of American linguistics since Boas's first works on language is the history of the influence of two great men,

Edward Sapir and Leonard Bloomfield. These men were in a very real sense complementary to one another. Sapir, on the one hand, was blessed with great insight and breadth of interest. He could be rigorous where rigor was needed, but rigor and devotion to a theoretical frame-work were the hallmarks of Bloomfield's work, characterized also, particularly in his later years, by a stark refusal to consider broader problems as a part of linguistic science. Sapir exerted a tremendous influence through his teaching, having many students who are now to be found at nearly every major university in the United States which supports linguistic studies. Bloomfield exerted his influence chiefly through his writings. Sapir did work in a very wide variety of languages, especially in American Indian languages. Bloomfield's practical work was confined largely to his studies of Algonkian and Tagalog, though he had a specialist's knowledge of problems in Indo-European linguistics.

Most of Sapir's principal writings, covering a broad territory which ranged from technical linguistic problems to musical criticism, have been conveniently assembled in one volume (Mandelbaum, 1949). Bloomfield's chief works were two general treatises on language (1914, 1933) and several shorter monographs, such as *Linguistic Aspects of Science* (1939).

In the recent history of American linguistics, there has been a marked efflorescence, not only in the volume of work accomplished and in the number of personnel added to the field, but also in the refinement of method. These developments have been partly due to various circumstances associated with World War II, such as government sponsored language-teaching programs, but they also came about owing to the continued influence

of the sound methodological foundations laid down by Sapir and Bloomfield.

Although the present work is concerned primarily with Ameriean linguistics something should be said about the similarities and contrasts between American schools of linguistics, on the one hand, and European schools of thought, on the other. American linguistics in the traditions of Sapir, Bloomfield, and now Harris, is characterized by an outlook which emphasizes the rigorous application of basic concepts, both in descriptive and in historical work. Such concepts include the phoneme, the morpheme, and other units of linguistic analysis which Bloomfield utilized to build a general theory of linguistic structure. Linguistic analysis is regarded as a logical calculus which involves the discovery of the basic units of a language and their formal arrangements, a procedure which can in principle be pursued without any reference to the external meanings of linguistic forms. There often seems to be a compulsion to carry such a procedure to its logical conclusion, even when the results may seem somewhat absurd from a commonsense point of view, (Usually, the absurdities clear up in further theoretical developments).

When an American linguist sets out to publish a description of a lanuage, the first half dozen pages are occupied by a systematic exposition of the phonemes of the language, the phonetic alternants or allophones, and the morphophonemics. This is followed by a treatment of the morphology and the syntax of the language. All of this looks quite formidable. One American linguist told the writer that thongh this manner of presentation is good in principle, it tends to frustrate the reader. At the

end of the first dozen pages or so one feels like saying, "Just show me a sentence or two in this language !"

It is impossible to characterize European schools of linguistics in any neat phrase. There are, of course a number of diverse trends, as in America. The influence of the Prague circle is still felt in many quarters even though the Prague circle itself no longer exists as such. Descriptive linguistics is strongly emphasized in a number of European countries, notably Holland and the Scandinavian countries; historical and comparative linguistics, particularly as applied to the Indo-European family, continues to receive much attention. But it may be said, perhaps, that European linguists have devoted even more attention to theoretical questions than have American linguists. The Danish linguist Hjelmslev, for example, has developed a new theory of linguistics called glossematics (Hjelmslev, 1943; see also Martinet, 1946). In any case, European linguistics covers a vast territory. It is increasingly active, and if anything, the interests of European linguists are broader than those of American linguists. There are perhaps ten or more periodicals in Europe devoted primarily to general linguistics, as compared to only three or four in America.

In the last year or two, there have been signs of a necessary and well-justified rapprochement, after a temporary lapse beginning in the thirties, between American and European linguistics. With the end of World War II and the consequent return of international communications to a nearly normal status, it became evident that recent development in European linguistics in some ways paralleled those in America. In his 1950 presidential address before the Linguistic Society of

America, Einar Haugen (1951) gently chided American linguists for their provincialism in thinking of linguistics in the tradition of Sapir and Bloomfield as the only sound linguistics. He pointed out that few American linguists had taken the trouble to compare the terminology of European linguists like Hjelmslev with their own, and that they had consequently failed to appreciate fully the extent to which the systems of discourse were similar. Hockett (1951), at least, has pointed the way to more balanced stock-taking of developments on both sides of the Atlantic. In a review of some published lectures by Martinet, Hockett gave credit to the advantages of Trubetskoy's system of phonology and defended it from the trivial criticisms levelled at it by certain American detractors. Whereas there had been considerable suspicion, on the part of American linguists, of the hypothesis of binary opposition, it is reported that at least some measure of agreement was achieved as the outcome of a series of lectures given by Roman Jakobson at the University of Michigan in the summer of 1951. American linguistics, for all that it has accomplished independently, should certainly seize any opportunity to achieve a broader synthesis of approaches ; such an opportunity seems now to be afforded by the presence of a number of European scholars in America and by the increased availability of European publications.

A useful source of information on the history of linguistic science before the twentieth century is Pedersens's treatise (1931). Iordan's *Introduction to Romance Linguistics* (1937), which has a broader scope than its title might indicate, contains illuminating discussions of general linguistic theory in the nineteenth century. One other treatise on the history of linguistics (Milewski, 1947) is unfortunately in Polish, making it relatively inaccessible to most American students ; it does, however, contain French

summaries. As yet, there is no formal history of American linguistics. Some impression of recent trends and events can be gained from the obituaries of such men as Sapir (Swadesh, 1939) and Bloomfied (Bloch, 1949). Other valuable references are Bloomfield's article "Twenty-one Years of the Linguistic Society" (1936), the previously cited article by Haugen (1951), and a recent article by Hall (1951), on "American linguistics 1925-1950."

Branches of Linguistics—

The whole field of linguistics can be divided in a number of ways, depending upon one's vantage point. For example, it can be divided into branches corresponding to the major language families or areas of the world, so that we have Indo-European linguistics, American Indian linguistics, etc., or even into smaller subdivisions, such as Germanic linguistics, Algonkian linguistics, etc. But such a division of the field of linguistics merely reflects the fact that many linguists tend to specialize in the languages of one or two fairly restricted groups. Our concern here is with a subdivision of linguistics into a number of branches and sub-branches corresponding to the types of content and method which are involved. All branches are related, however, and in many cases overlapping, so that the described below can be characterized only as foci of interest.

As we have already stated, the primary business of linguistics is to study the living and the recorded language systems of the world. This enterprise is usually considered under two major headings, descriptive linguistics and historical, or comparative, linguistics. Descriptive linguistics studies the characteristics of language systems or dialects at given points in their histories, while historical and comparative linguistics

describes changes in language systems over periods of time and considers the familiar and genealogical relationships of languages. A special branch of linguistics which often involves both descriptive (synchronic) and historical (diachronic) considerations is linguistic geography, which studies the characteristics and the geographic diffusion patterns of the various dialects of a language system.

Whether one is concerned with descriptive, historical, comparative, or geographical problems, one operates with a body of analytical methodclgy which may be considered under several headings, corresponding to the levels of analysis which may be undertaken :

(1) Phonetics is the science of vocal sounds used in language systems ; as applied linguistic analysis, it usually takes the form of a description of the sounds of a language (vowels, semivowels, consonants, pitches or tones, stresses, and junctures) in terms of certain more or less standardized classificatory schemes which appeal to articulatory or to acoustic principles.

(2) Phonemics, as applied in linguistic analysis, pertains to the classification of the sounds of a language into those units of sound, called phonemes, which operate in making the essential perceptual distinctions between the possible utterances of a language.

(3) Morphology is the study of the manner in which words are constructed. More precisely, it is concerned with the identification of morphemes, their arrangements in words, and the changes in morphemes and their arrangements which take place in various grammatical constructions. Morphemes, composed of phonemes, may be roughly defined as the smallest units of structure which embody grammatical or lexical meanings. The study of morphology necessitates the discovery of form

classes, that is, classes of morphemes or words which can serve in similar positions in utterances. These form classes will often correspond roughly to what are ordinarily called parts of speech.

(4) Morphophonemics is a branch of morphology which consists of statements about the ways in which the morphemes of a language are constituted from a phonemic point of view and about the phonemic variations in morphemes which are observed in different grammatical constructions.

(5) Syntax studies the manner in which sentences are constructed from words ; it bears an intimate relation to morphology, however, because the morphological constructions of a language are usually greatly conditioned by syntactical arrangements, and because the building blocks of a sentence consist of words as members of form classes. Thus, the morphology and the syntax of a language are often treated together, or even as a single class of phenomena.

(6) Lexicography, in linguistic analysis, is the listing of all meaningful elements in the language system, with statements of their meanings or verbal equivalences. It should be realized that the meaningful elements of a language include not only its words, such as are ordinarily listed in dictionaries, but also all morphemes which are not words, and in fact all other elements or grammatical features which carry some kind of meaning (such as gender, tense, case, aspect, etc.). A truly adequate lexicon of a language would have to list even the stress and intonation patterns of a language, together with an account of their meanings or (if the meanings depend on their structural features) their conditional meanings. It is also proper to state, in lists of morphemes and words, the form classes to which these belong.

All that there is to do in studying language systems and their changes can in principle be done by the application of methodology in phonetics, phonemics, morphophonemics, morphology, syntax, and lexicography. The methodology used in historical and comparative studies is often called the comparative method, but this can be said to consist of a special aggregation of procedures from the basic methodological disciplines in linguistics, with the addition of temporal and spatial dimensions.

Beyond the study of particular language systems, linguistic scientists are also concerned with developing valid generalizations about all language systems. For example, the phonemic, morphological, or syntactical features of languages can be studied comparatively, whether these languages are familiarly related or not. This general comparison of the language systems has been called general contrastive linguistics by Trager (1949), but it might as well be thought of as the subject matter of general linguistics, it might as well be thought of as the subject matter of general linguistics, divided into general phonemics, general morphology, etc. When one's interest centers in the classification of linguistic structures, one speaks of linguistic typology.

General phonetics, in fact, is virtually a science in its own right, with two chief branches, motor phonetics (or articulatory phonetics) and acoustic phonetics. The former is concerned with the physiological, articulatory aspects of speech-sound production ; the latter studies the physical attributes of speech sounds. A third branch of phonetics, which might be called perceptual phonetics, is concerned with the characteristics of speech sounds as perceived by the hearer ; this branch, however, has received less attention than the others. Instrumental phonetics is a term often used to denote those aspects of phonetics which are studied by means of

physical instruments, such as the sound spectrograph or the x-ray camera. The term experimental phonetics is also sometimes used in this connection, but in some ways it is a misnomer, for many studies in instrumental phonetics utilize ovservational rather than truly experimental methods. (By an experimental method, we would understand a method which seeks to determine the effects of certain operations under controlled conditions.)

Until now, we have considered those branches of linguistics which are concerned with phenomena intrinsic to language systems as such. It may be presumed, however, that language systems bear relations to other cultural and social institutions and in general to the behavior of the human beings who use language systems. As we shall see, there has for many years been a persistent interest in such relations. Trager, in the paper cited above (1949), has proposed to term the study of the these relations metalinguistics. To quote from Trager's own words :

"Language has been indicated as being only one of the systematic arrangements of cultural items that societies possess. A culture consists of many such systems—language, social organization, religion, technology, law, etc. Each of these cultural systems other than language is dependent on language for its organization and existence, but otherwise constitutes an independent system whose patterning may be described. In theory, when one has arrived at the separate statements of each such cultural system, one can then proceed to a comparison with the linguistic system. The full statement of the point-by-point and pattern-by-pattern relations between the language and any of the other cultural systems will contian all the "meanings" of the linguistic forms, and will constitute the metalinguistics of that culture.

"From this point of view all the special fields of social science, and of the so-called humanities, are special problems in metalinguistics. But this is not to say that they are not perfectly proper and independent fields of study in themselves. It is simply that certain of their fundamental statements and approaches can only be properly delimited in terms of a formulation based on the linguistic system. On the other hand, the statement of the meanings of linguistic froms is dependent on the formulations of other cultural systems than language, and the technical applications of linguistic analysis—such as language teaching and language learning, are largely metalinguistic.

"The psychologist concerned with the learning process must necessarily be aware of that part of metalinguistics dealing with the relation of the linguistic system and its parts to the entities—material or nonmaterial—presented for learning. The political scientist deals constantly with metalinguistic data. The analyst of style or of art trends is doing metalinguistics, though badly and per-scientfically. The logician and methematician must be aware of certain metalinguistic data about linguistic systems to avoid being carried away into nonsense.

"Metalinguistics is then a greatly expandable field of science which can come to serve as the means whereby linguistics, and language, can become the tool for the scientific description (=measurement) of all phenomena in the universe. Its data will serve to connect the physical and biological sciences on the one side with linguistics, and the latter with the other social sciences (and humanities) on the other side."

One may not agree with Trager in every respect, but the central ideas which he seems to stress are the following :

(a) Language embodies a way of describing, or talking with reference to, all aspects of the environment in which the speaker may find himself. The description of the meanings of linguistic forms must therefore involve reference to that environment, including the cultural environment. Since, in Trager's view, the study of language systems as such cannot embrace all problems of linguistic meaning (except in so far as differences in linguistic form correspond with differences in meaning), the making of statements about meaning properly falls within the province of metalinguistics.

(b) The every act of using language, whether in day-to-day routine behavior or in the pursuits of the physical, biological, and social sciences, depends in some way upon the structure of the linguistic code which is being used. The study of communicative behavior in general, and in particular the critique of scientific activities, must therefore take account of the linguistic codes which are inevitably involved in these behaviors. Perhaps linguistic codes have an effect in such kinds of activities as art, mathematics, logic, or religion.

Several questions may be raised about this definition of metalinguistics. First, does it go too far and does it include too much territory? Let us agree that Trager's statement was intended as merely a description of an area of study, not as an arrogation of subject matter for linguistics, nor as a specification of the division of labor in science. For in that respect, metalinguistics would necessarily be an interdisciplinary field. From this point of view, metalinguistics does not seem

too broadly defined. From another point of view, however, the definition is debatable. Trager seems to have fallen into the Bloomfieldian error of supposing that one cannot talk about meaning unless one has a complete scientific description of the objects, events, and relations to which linguistic forms refer (see Bloomfield, 1933, pp. 74-75, 139). While it may be true that to define the word apple we would like some comprehension of the scientific classification of the things to which the word refers, we do not have to know all about apples to state the meaning of the word. The fact that the words pineapple and love-apple do not refer to kinds of apples can properly be commented on in metalinguistics, but it has no bearing on the scientific classification of plant forms. Meanings of linguistic forms can be stated by rephrasing in terms of other linguistic forms (as is done in a dictionary) or in various other ways which would not necessarily appeal to scientific description.

An even more basic assumption made by Trager is that the specification of linguistic meanings is not the proper business of descriptive linguistics, and that semantic considerations should be treated only in metalinguistics, where the relevant cultural and ethnological information can be brought to bear. The idea of such a division of labor is seductive, but completely fallacious and at all events unnecessary. A system of meanings, as we have previously stated, is intrinsic to the notion of a language system ; therefore, to describe a language system is, among other things, to state its system of meanings, and this is always possible by the usual lexicographical procedures (translation into other words of the same language or into words of another language). As a matter of methodology, it is preferable to attempt the isolation of linguistic elements purely by reference to their

distributional characteristics, that is, without reference to their meanings, but to describe a language without at some point stating its meanings is to set up a code book without a key.

There remains the question of whether it is dangerous to specify meanings before cultural and ethnological data have heen considered. Actually, the large majority of high frequency linguistic forms in the languages of the world refer to experiences which are common to the whole human race; for the remainder, the special cultural denotations are readily translatable into the common experiences of other peoples. Meanings can and should be stated in descriptive linguistics; as a matter of fact, they usually are—witness almost any descriptive grammar of a foreign language. It may even be determined by distributional analysis, perhaps by methods of what Harris (1952) calls discourse analysis.

It cannot be denied, however, that the further study and analysis of meanings with reference to cultural systems can be fruitful; such study and analysis can be regarded, if one chooses, as in the province of metalinguistics.

One may also take exception to Trager's statement that "all the special fields of social science, and of the so-called humanities, are special problems in metalinguistics." It is true that social sciences and the humanities all involve linguistic problems to an extent which has not been fully appreciated; nevertheless, not all statements in these disciplines concern behaviors or phenomena which are necessarily dependent on language structure or language meanings. While the statements themselves may be verbal, they are rather freely convertible into equivalent, but different, verbal statements; they are usually translatable into other languages, or sometimes into statistical,

graphic, or other nonverbal representations. Any fair-minded social scientist or humanist will be able to perceive the relevance of linguistics for his own pursuits, but he should not be pushed to admit that his work is merely a special variety of metalinguistics. (The writer, as a psychologist will vouch for the soundness of this judgment in the case of social psychology).

Let us therefore agree to restrict "metalinguistics" to studies of cultural systems or behavior patterns which show special correspondences with language structure aad language meanings. For such studies there is a great need, and it is well that Trager has proposed a term to cover them. In this sense, metalinguistics represents a return to the kinds of interests which Sapir so fruitfully explored.

Several linguists (for example, Haugen, 1951, p. 212) have pointed out the need for replacing the term "metalinguistics" with a term which would not lead to confnsion with its present use by philosophers in referring to "a theory of languages about languages." One term which has been proposed is exolinguistics, the prefix suggesting that one is dealing with something which stems out of linguistics but which is not identical with linguistics. I shall use this term, rather than metalinguistics, throughout the remainder of this book.

Current Trends in the Methodology of Descriptive Linguistics—

General Remarks :—

It is safe to say that the science of linguistics is in a well-developed stage, so far as methodology is concerned. The methodology of descriptive linguistics evolved slowly but surely in the nineteenth century; with the wide acceptance of the concept

of the phoneme in the early twentieth century and the publication of Bloomfied's general treatise *Language* (1933), descriptive linguistics in America entered its mature phase. Bloomfield's book is in many ways a remarkable work. By 1933, a sufficient variety of data and observations had accumulated to enable Bloomfield to construct, almost singlehanded, a comprehensive and systematic theory for the methodology of linguistic analysis. True, the concept of phoneme had been well explored by others, but it was primarily Bloomfield who elaborated techniques of analyzing higher linguistic units such as the morpheme, the tagmeme, and so forth. Even now, Bloomfield's work is regarded by many linguists as far in advance of the times. At one sweep, he set forth conclusions as to the details of linguistic methodology which are even now being finally verified. There may be certain detailed questions on which linguists have not yet reached agreement, but the essential framework for setting these arguments is to be found in Bloomfield's procedures.

Since the publication of Bloomfield's work in 1933, theoretical discussions among linguists have been largely on matters of refinement, for example, on terminological questions, or on problems of the classification of certain theoretical concepts. A very recent authoritative treatment of the methodology of linguistic analysis, with numerous expansions and modificatications of Bloomfield's techniques, is that by Harris (1951).

One test of a scientific methodology is the extent to which it achieves consistent results in the hands of different scientists. Let us look at linguistic methodology from this point of view.

It can be confidently stated that linguistic methodology is so

well advanced today that if we took two fairly bright graduate students, trained them in linguistic analysis at two different universities, and sent them out to make descriptions of a new unanalyzed language at two different times and using two different informants (assuming the informants spoke the same dialect), the resulting analyses would be highly similar, differing only in matters of emphasis and minor detail. Objective tests of this assertion have probably never been made, because trained linguists are too much in demand and there are too many languages which remain to be recorded and analyzed, but the evidence points strongly to such a conclusion. The Navaho language has been independently studied by a number of linguists, for example, but no startling discrepancies in their analyses have turned up. The methodology of descriptive linguistics has been developed in such a way that it is no longer an art in any sense, but simply a matter of intelligently following a number of definite operational procedures.

What happens when liguistic analysis is attempted by untrained persons, without the aid of a rigorous methodology, can be seen in the often divergent and unsatisfactory accounts of American Indian languages made by travelers and missionaries in the eighteenth and nineteenth centuries. Their phonetic and grammatical descriptions were too often colored by unconscious biases and false preconceptions stemming from the characteristics of their native tongues or from their training in traditional grammar. The misguided analyses which even today are occasionally undertaken by untrained persons are usually of little use to linguistic scientists. We make this point only because of the common belief that any educated person can make a study of a language; after all, in a field like chemistry few non-specialists would claim competence in making a chemical analysis.

We would not wish to imply that methodology is a finished chapter of linguistics. The basic procedures for describing the sounds of a language, and for identifying the phonemes and morphemes, have been fairly well worked out, but there still

remain questions of detail, and even some qustions of basic theory. When we get to the study of the higher units of a language, by which we mean the units involved in the systematie arrangements of forms, theory has advanced more slowly. There are a number of reasons for this. It has been thought necessary to develop the methodology for the study of the smaller units first; once the smaller units have been identified, the way is open to the study of higher units. A second reason is that data which have to be collected for the study of the larger units of a language are more unwieldy. A page or two of running phonetic text would provide illustrations of practically all the phonemics and a considerable portion of the morphology of a language, but it would yield only a moderate sample of the possible variety of syntactical constructions characteristic of the language. A third reason for lack of progress is the relatively great complexity of the higher units of linguistic structure.

A general characteristic of the methodology of descriptive linguistics, as practised by many American linguists today, is the effort to analyze linguistic structure without reference to meaning. It is thought possible in theory that one could identify the phonemes and morphemes of a language purely on the basis of their distribution, that is, by noting the linguistic environments in which they occur. Such a type of analysis would be desirable, it is thought, because unconscious biases might lead one to prejudge the analysis if one makes references to meanings. Harris offers procedures which place "stress on distribution rather than meaning in setting up the morphemes" (1951, p. 3); he presumes that "any two morphemes A and B having different meanings also differ somewhere in distribution: there are some environments in which one occurs and the other does not"(p. 7 fn.). Thus, to Harris, the use of meaning in linguistic analysis is only a hit-or-miss, intuitive short cut which can always be replaced if

rigor is desired, by distributional procedures. Nevertheless, for Harris, distributional analysis is used only up to the point of identifying linguistic entities and features. After they are identified, their linguistic meanings can be sought. This is indeed what Fries (1952) has tried to do in his analysis of English structure; he has identified English form classes primarily on distributional grounds, but he has then attempted to specify the "structural meanings" which are conveyed by these form classes.

In practical linguistic work, it is recognized by most linguists that the meanings of linguistic forms need to be taken account of in building up the structural analysis of a language. Voegelin (1948), for example, points out that differences of meaning help us to designate the phonemes of a language, and that equivalences of meaning help us to determine the morphemes. In field work, the linguist often asks his informant whether two forms are the same or different, either in sound or in meaning. He will also ask the informant about the circumstances in which the forms are used, and he may listen to the informant holding a conversation. For all the emphasis that some linguists have put, as a matter of theory, upon the analysis of linguistic structure apart from its meanings, these same linguists have but at least an equal emphasis on getting meanings and behavioral and cultural correlates, when studying a language in the field. It is a natural step for a linguistic fieldworker to concern himself with lexicography.

Methodology in Phonetics :

Motor phonetics was well established in the nineteenth century by the time Sievers's *Grundzuge der Lautphysiologie* (1876) and Sweet's *Handbook of Phonetics* (1877) were published. The major achievements since then are represented by further standardization of phonetic alphabets and by

refinements in the description of sounds. Progress has been stimulated by the discovery of a very wide variety of speech sounds in the various languages of the world. Pike's *Phonetics* (1943) is widely regarded as one of the best contemporary treatments of this subject ; a recent handbook appearing in Europe is Dieth's *Vademekum der Phonetik* (1950).

Acoustic phonetics was also fairly well established in the nineteenth century. Major advances in acoustic phonetics have been made only recently, however, attendant upon the availability of electronic means of sound analysis and sound production. Joos's monograph, *Acoustic Phonetics* (1948), reports the first attempt by a linguist to use in acoustic phonetics a recently developed instrument known as the sound spectrograph. The sound spectrograph, in its commercial form, is an instrument which makes it readily possible to display on a time base the distribution of energy over the sound-frequency spectrum (up to, say, 4000 cycles per second) in an utterance lasting 2.4 seconds. Sound spectrography promises to yield important results for linguistic analysis. Communications engineers are making significant contributions to this presently very active field.

Methodology in Phonemics :

If we examine a series of utterances by the speakers of a language, we note that some segments of these utterances are similar. If we carry our analysis down to the smallest units which can be recognized as similar, we may be able to identify a *class* of sounds all of which are similar. Nevertheless, the sounds which may be put together in a class may under certain conditions be regarded as constituting a phoneme. These conditions are embodied in the principles of *complementary distribution* and of *patterned congruence*. The principle of

complementary distribution requires that no two of the phonetically similar sounds ever contrast with each other, that is, operate in such a way as to produce distinctions of meaning between two utterances. For an English example, *t* in *tone* and *t* in *stone* are phonetically different, the former being aspirated and latter being unaspirated. Nevertheless, in English there are no situations where the contrast between an aspirated and an unaspirated *t* makes any difference in the meanings of words ; therefore they may be assigned to the same phoneme. The two *t* sounds are then regarded as different *allophones* of the same phoneme, but in describing their difference one appeals to phonetics rather than to phonemics. The principle of patterned congruence involves grouping the sounds of a language with respect to the kinds of environments (that is, the preceding and following sounds) in which they occur and noting certain congruences in the behavior of partially similar sounds. Application of these principles enables linguistic workers to arrive at reasonably consistent and replicable descriptions of the phonemes of a language. The phonemic systems of a fair number of languages have been worked out, at least with respect to their segmental phonemes ; phenomena of pitch, stress, and juncture have received less attention.

Interest has lately been manifested in a more refined linguistic analysis of the phoneme, for both theoretical and practical purposes. Trubetskoy (1939) and Roman Jakobson (1928, 1949) have defined the phoneme as a bundle of simultaneous distinctive features. These distinctive features consist of binary, two-valued oppositions or contrasts, such as *voiced/unvoiced, high/low*, or *rounded/ unrounded*. Examples of the application of this theory may be found in papers by Jakobson and Lotz (1949), Soffietti (1949), and Garvin (1948). Lotz (1950) points out that there are usually only six to eight

distinctive features to be found in any given language, as contrasted with an average of 25 to 30 segmental phonemes. Jakobson's important work on child language (1941) attempts to show that the distinctive features come into a child's phonemic equipment in a definite ontogenetic sequence, which also reflects a possible phylogenetic classification of languages.

The formulation of the theory of the phoneme takes its place as one of the more significant intellectual achievements in the social sciences. Essentially, a phoneme exemplifies a unit of a culturally determined system which arouses a differential response in a member of the culture. It represents, within that system, a class of possible events (in this case, *allophones*, that is, physically or phonetically different sounds) which are equipollent with respect to the behavioral discriminations which can be observed in the users of the system. The discriminations involved in the case of the phoneme happen to be those having to do with differences in meaning of the forms in which the phonemes appear. By analogy with the phoneme, higher-order linguistic units are identified in terms of equivalences or differences of response which they evoke, or in terms of the substitution groups within which they are equipollent in respect to structural arrangement. The general methodology of phonemics has been employed by Birdwhistell (1952) in identifying what he calls "kinemes," that is, units of gestural expression.

It has been suggested that methods of linguistics which have been developed for the purpose of discovering units can be applied to other cultural systems, for example, folklore, songs, and dances. Such a suggestion has thus far been very little explored; however, the methods used by the anthropologist Rouse (1939) in connection with identifying what he calls "types" and "modes" in Haitian pottery relics bear some similarity to linguistic methods for identifying phonemes.

We may also mention, in this connection, the work of Levi-Strauss (1949, 1951) on kinship systems and of Bogatyrev (1937) on folk costumes.

Methodology in Morphology and Syntax :

The traditional procedure in morphology and syntax was to identify the various "parts of speech" (nouns, pronouns, adjectives, verbs, and so on), to notice their changes in form under various grammatical conditions, and to describe the arrangements of these forms in complete sentences in accordance with the "meanings" of these sentences. Parts of speech were identified with reference to their assumed functions : for examples, nouns were held to be words which refer to "things". Such a procedure has worked reasonably well for languages in the Indo-European family, but it demands fundamental modifications when applied to certain languages which are structured differently from those of the general Indo-European pattern. Even when applied to familiar languages like English, however, it is likely to lead to confusing or inconsistent results. For example, the concept of the verb must be taken differently depending on whether we are dealing with so-called copulative verbs like *be* or *seem*, or with various other types of verbs like *make*, *hit*, or *happen*, since not all of these verbs can be regarded as referring to "actions," and they do not always occur in similar positions in sentence constructions. The basic fault of traditional procedures in morphology and syntax has been that the principles on which they have operated, along with their strong emphasis on a logical analysis of categories of meaning, have tended to prejudge the results of the analysis.

Modern linguistics has been remarkably successful in overcoming the mental hazards which traditional procedures have created for anyone desirous of making objective analyses of language. Linguists will admit the inherent difficulties of making

such analyses, pointing to the relative complexity of morphological and syntactical phenomena, but the basic rules of proper procedure are now reasonably well established.

If there is to be a perfectly objective procedure in linguistic analysis, it must be thought of as a process of decipherment. It is as if the linguist were a cryptanalyst trying to "crack" a code whose units he does not know. In such a process, the linguist who has identified, at least tentatively, the phonemes of a language would next seek ways of segmenting utterances into valid units of form. Each form would consist of an aggregation of phonemes. The linguist would look for and find a considerable number of phoneme aggregations occurring with relatively high frequency in the corpus being analyzed, but he would not know whether all of these aggregations constituted real units in the language. Some of them might, for example, be aggregations composed of the end of one unit and the beginning of the following unit. Fortunately, in all languages there are at least some constructive features which serve to guide the linguist in finding the boundaries between units. In English, for example, units are marked off by features of stress, pitch, and juncture, and by certain characteristics of sound sequences. By use of constructive features and other phenomena, the linguist is eventually able to identify what are called the morphemes of a language. The first step in morphological analysis is, in fact, the tentative identification of morphemes. The procedures are relatively complicated and cannot be discussed here in detail.

Bloch and Trager (1942, p. 54) define the morpheme in the following way: "Any form, whether free or bound, which cannot be divided into smaller parts (that is, smaller forms) is a morpheme. Thus, *man*, *play*, *person* are words consisting of a single morpheme each; *manly*, *played*, *personal* are complex words, since each of them contains a bound morpheme (*-ly*,*-ed*,*-al*)."

Having identified the morphemes of a language, the linguist proceeds to study the ways in which morphemes are put together in words, and the ways in which morphemes change in various grammatical constructions. This study is properly called *morphology*. Just as phonemes have allophones (positional variants), morphemes have *allomorphs*. The allomorphs may be sometimes quite different phonemically; for example, the allomorphs of the morpheme -{ be }- include *am*, *are*, and *is*, the occurrence of these allomorphs being conditioned by their environments —*am*, for instance, normally occurring only in the environment of I.

Another step in morphology is to assign forms to form classes on the basis of their differential positioning in utterances. This can be done for either free or bound morphemes, or even for complete words. For example, we might determine the class of morphemes which can be substituted for *good* in *goodness*, comparing it, perhaps, with the class of morphemes which can be substituted for *good* in *goodly*. Fries (1952) has given a particularly vivid demonstration of this procedure as applied to complete words. For example, by setting up the "frame"

The — was good

and listing words found in the position denoted by the blank, he tentatively sets up a form class consisting of *concert*, *food*, *coffee*, *taste*, *container*, *difference*, *privacy*, *family*, and *company*. In addition to the procedure of determining substitution classes, one must also study the modifications which take place in morphemes, or the additional elements which may be affixed to them, when they are used in different classes.

It is only after form classes of morphemes and words have been (at least tentatively) established that one proceeds to syntactical problems. Syntax is concerned primarily, of course,

with the arrangements of words in sentences. A sentence may be roughly defined as an utterance consisting of one or more form classes arranged in any of certain sequence patterns found in a given language. The study of syntax is essentially a problem of determining the regularities in the arrangements of form classes.

One other concept which is important in morphology and syntax is that of the *immediate constituent*. An immediate constituent is a group of linguistic elements which functions as a unit in some larger whole. The phrase *old men and women* could be divided into immediate constituents in either of two ways, depending on whether *old* is to refer to both the men and the women or just the men (in speech, the difference would normally be conveyed by features of stress and juncture):

Old | men and women

Old men | and | women

The study of syntax is greatly facilitated by studying the types of immediate constituents which occur. (The reader may note certain similarities with the traditional procedure of "parsing" a sentence; however, the fact that the end results are frequently, but not always, the same should not be allowed to obscure the basic differences in fundamental approach.)

It will have been evident from the above discussion that modern practice in identifying the morphological and syntactical features of a language appeals largely to the arrangements of various types of linguistic forms and very little to the "meanings" expressed by these arrangements. Once the features have been identified, however, their meanings deserve to be determined. Fries (1952, p. 56) states that "the grammar of a language consists of the devices that signal structural meanings."

Structural meanings are those which are conveyed by patterns of arrangement and the selection of form classes, as contrasted with lexical meanings, the meanings of the forms themselves. For example, among the structural meanings signalled by the construction of a sentence are those which have to do with whether it is a statement, a question, or a request. Other structural meanings may have to do with the roles played by the various items referred to (for example, who or what was the "performer" of an action, what is being identified, etc.), and the relative time at which something is said to be true. Statements as to the structural meanings of such grammatical features as gender, tense, aspect, case, etc., all have a place in the description of a language system. It must be realized, nevertheless, that these meanings are solely formal and structural and may have only accidental bearing on anything in the world of experience. To illustrate : in languages which have the grammatical feature of gender, the "meaning" of gender implies only a linguistic contrast between several classes of forms. The fact that truly male beings are usually assigned to one of these classes and that truly female beings are usually assigned to another of these classes needs to be stated, if it happens to be the case, but it should not be understood to imply that the "meaning" of the former class is "male" and of the latter class "female".

Among recent works on morphology and syntax, we may cite, first of all, Harris's *Methods in Structural Linguistics* (1951), a major part of which is devoted to procedures in this field. Nida's *Morphology* (1946) and several articles on immediate constituents (Wells, 1947; Nida, 1948) are also significant. A somewhat older work of interest is Jesperson's *Analytic Syntax* (1937). Two somewhat different approaches to the analysis of English structure are Trager and Smith's *Outline of English Structure* (1951), distinguished by its use of a much greater range of linguistic phenomena than had been taken account of previously, and Fries's *The Structure of English*

(1952), concerned chiefly with syntactical problems. Pike's *The Intonation of American English* (1946) shows how the intonation of English is an intrinsic part of its grammar.

Many students of language have remarked that there appears to be considerable psychological validity in the *word* as a unit of language. "Linguistic experience," writes Sapir (1921, p. 34), "both as expressed in standardized written form and as tested in daily usage, indicates overwhelmingly that there is not, as a rule, the slightest difficulty in bringing the word to consciousness as a psychological reality. No more convincing test could be desired than this, that the native Indian, quite unaccustomed to the concept of the written word, has nevertheless no serious difficulty in dictating a text to a linguistic student word by word." The *word*, then appears to have some sort of psychological validity, but there is no way of being sure of this. On the other hand, linguistic scientists have had not a little difficulty in specifying rigorous operational procedures in identifying words. Bloomfield, for example, defined a word as a minimal free form, that is, a free form which cannot be divided entirely into smaller free forms (1933, p. 178). Nevertheless, Bloomfield himself had difficulty in making this criterion work for him.

Of course, the division of speech into "words" which is provided by conventional systems of writing would never be accepted as anything more than a rough guide. For example, the fact that French *je* ("I") is written as a single word is no guarantee that it is a minimal free form, for actually it seems not to be "free" — it is always used with a verb, and there are a limited number of ways in which it may be separated from the verb (only by such particles as *me*, *ne*, *y*, and the like). From a structural point of view, *je* is almost as closely bound to the verb as the suffix *—o* in Latin *amo*. Linguists thus regard *je* and *—o* as morphemes, but do not regard them necessarily as words.

Linguists would also stoutly reject any suggestion that words be identified by reference to the concepts they are said to express. The word is not necessarily a counterpart of a single concept, as so many nonlinguists seem to feel. Sapir (1921, p. 33) mentions a Nootka "word" which denotes "I have been accustomed to eat twenty round objects [for example, apples] while engaged in [doing so and so]." Any attempt to equate words with concepts can lead to erroneous conclusions. Let us consider, for example, a statement made by the educational psychologist Judd in his book *Education as the Cultivation of the Higher Mental Processes* (1936, p. 24). On the basis of his finding that there are many more nouns, verbs, and adjectives in dictionaries than there are relational words such as prepositions and conjunctions, Judd concludes that there is "a limited number of ways in which the mind is capable of combining and relating substantive experience." At least two fallacies are involved here. First, Judd assumes that prepositions and conjunctions have to do with relations, while nouns, verbs, and adjectives do not. This is highly questionable : many nouns, verbs and adjectives clearly have to do with "relations." Secondly, there is the assumption that words have a one-to-one correspondence to concepts. The number of different conceptual relations which can be expressed by a single preposition in English (for instance, *of*) is quite large, even if we rely only on the number of distinctions recognized by an unabridged dictionary.

It is clear, than that the analysis of a language system must be made not on the basis of intuitive psychological analysis but on the basis of rigorous operational procedures. Suppose linguistic analysis were able to show that there is no such thing as a *word*; we would then be forced to accept that fact, regardless of any psychological intuitions we might have to the

contrary. Before we can talk usefully about the psychological or exolinguistic interpretations of linguistic structure, we must have adequate descriptions of that structure, prepared by linguistic scientists using their own methods of analysis. We must know with confidence that the true signaling units have been identified. Before Fries's analysis of English sentence construction became available, one would have been somewhat hesitant in setting forth upon any programme for experimentation into the psychological process involved in the perception of the structural meanings in sentences...

The Linguist as a Teacher of Languages

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(Commonly recommended methods for learning a foreign language are inadequate because most people are not equipped to solve the problems that inevitably arise. The best results are obtained through imitation of a native speaker under the guidance of a trained linguist. Principles first used in recording American Indian languages have been applied to the teaching of oriental languages with unexpectedly good results.)

I

Today there is a greater need than ever before in the history of the world for learning foreign languages especially the languages of the Orient—and for learning them as quickly and as efficiently as possible. Yet at every turn we encounter the belief that oriental languages are so mysterious and so intricate that they simply cannot be learned, at least not by English-speaking people. Recently I heard an American woman say to her Chinese companion, 'You know that we could never learn Chinese !' I did not hear the reply ; but it might well have been, 'If thousands of Chinese can learn English, why can't Americans learn Chinese ? Surely English must be as difficult for the Chinese as their language is for you.' The truth is that we consider the languages of the Orient impossible to learn because we feel no actual need for learning them ; whereas Orientals in every part of Asia do feel a need for learning English and therefore learn it. As soon as we take a real interest in the Orient

and in other once-remote parts of the world, we shall be as well able to learn their languages as Orientals are to learn ours.

However, even if someone has this interest, he will encounter many obstacles in his attempts to learn an oriental language. The chances are that he will find no trained teachers of the language ; and what may discourage him still more, he will probably find very few textbooks, all or nearly all so badly designed as to be quite useless. How then is he to learn the language ?

Popular advice on this problem runs something like this : 'The best thing to do is to go to the country where the language is spoken and pick it up there. If you cannot do that, perhaps you can find someone who has lived there and persuade him to teach you. Or there may be a native speaker of the language somewhere in this country who could give you lessons.' Let us see what is likely to happen to someone who adopts advice of this kind.

Suppose first that he can go to the country where the language is spoken. Here he will try to acquire it by 'absorption' or with the help of a native teacher. We have all known immigrants who learned English by this method ; we have observed their bewildering pronunciation and their jumbled grammar ; and yet, in the face of our experience, most of us still believe that this is the best way to learn a foreign language. If the student is exceptionally gifted, he will acquire some knowledge of the language simply by hearing it constantly spoken around him ; but unless he can afford to spend many years of his life in the foreign country and is willing to keep up his efforts to learn the language, he is likely to have only fair success. Westerners often assume that Orientals are willing to accept almost any mispronunciation of their languages (since these are virtually 'unpronounceable' anyway) ; but in fact our

mistakes are just as ridiculous to them as theirs are to us. Others like to think that Orientals will overlook our mistakes because they are too polite to laugh at us; but if we want to escape at least covert ridicule we must return the Orientals' politeness and do them the courtesy of trying to speak their languages correctly. The truth is that many Westerners who have learned an oriental language by 'picking it up' in Asia so mispronounce and misconstrue it that they are scarcely understood except by those natives who know enough English to anticipate and make allowances for their mistakes.

If the student finds it impossible to go to the country where the language is spoken, he may decide instead to employ the services of a returned traveler as teacher. If the latter really knows the language well and speaks it fluently and correctly, then he can be considered the equivalent of a native speaker. But how is the student to judge of this important matter? How is he to be sure that the returned traveler is not one of those Westerners whose speech the natives consider comical or even incomprehensible? Any assurance which the traveler himself may offer on this point is obviously worthless.

Finally, the student may be lucky enough to find a native speaker of the language who is willing to teach him. Now surely, we might suppose, he will be able to learn the language well; but again there is a snag. To learn a language from a native speaker one must have a technique for eliciting the proper information from him, and a method for analyzing and organizing the information when the speaker has supplied it. Few people have this technical equipment; yet without it, a student cannot hope to make much headway. Even in the matter of pronunciation — in some ways the most superficial of the difficulties facing him he can make little progress unless he has been trained in general phonetics; for the native speaker, to whom of course all the sounds of his own language are

'natural'[1] cannot explain to the student why and in what respects he mispronounces, or tell him how to produce the sounds which happen not to occur in the student's language. The guidebooks that have been written to assist the student are often more confusing than no help at all. One such book, written for Europeans learning Thai (Siamese), can come no closer than this to a description of the voiceless unaspirated stops k, t, p : the first is '$\frac{3}{4}$ G and $\frac{1}{4}$ K', the second is 'a mean between the sound of T and D', the last is '$\frac{2}{3}$ P and $\frac{1}{3}$ B.'[2].

At this point we seem to have reached an impasse. Is there then no method for learning a difficult foreign language without adequate textbooks and trained teachers?

The answer is an inspiring one: any language can be learned, quickly and correctly, by a trained linguist working with a native speaker, whom he treats not as a teacher but purely as a source of information. The linguist is thoroughly trained in phonetics and in grammatical analysis; in the most favourable case he has already analyzed one or more languages before he approaches the one to be learned. His method is simple. He persuades his informant (the native speaker) to talk in the foreign language ; he listens carefully, and writes down what the informant says in a phonetic alphabet, which he converts as soon as possible into a practical orthography (a phonemic transcriptin); he compares and analyzes the forms of the new language; and classifies them in terms of its own grammatical system, without reference to the grammar of English or of any other language previously known to him. Moreover, the linguist imitates

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1. This applies to native speakers of English as of other languages. A Thai girl studying in this country was once encouragingly told to pronounce *th* naturally.

2. B.O. Cartwright, *The Student's Manual of the Siamese Language* (rev. ed., Bangkok, 1930).

everything the informant says, and keeps on imitating until the informant is completely satisfied with his pronunciation; it is by this means that he learns the language — not by asking the informant how he makes this or that sound, or why he speaks a sentence in this way and not in that.

A more detailed discussion of the method is to be found in two booklets recently issued by the Linguistic Society of America: *Outline Guide for the Practical Study of Foreign Languages*, by Leonard Bloomfield; and *Outline of Linguistic Analysis*, by Bernard Bloch and George L. Trager. The first of these tells how the relevant information is most efficiently obtained from a native speaker; the second tells how the information, once obtained, is most efficiently analyzed.

II

Many of the fundamental features of the method described in these booklets were first developed in the study of American Indian languages, which often present unusually difficult phonetic and grammatical systems. Those who have used the method to analyze and describe American Indian languages have known all along that it could be applied with equal success to any language, written or unwritten; but this fact has only recently been proved. Proof came when a group of scholars (several of whom had previously worked on American Indian languages) were engaged by the Intensive Language Program of the American Council of Learned Societies to apply this method to the study of oriental languages.

The successful application of the method to the analysis and description of a number of oriental languages was notable in itself. But equally important was the demonstration that the method is also useful in teaching — more useful, in fact, than almost any other previously tried. For the latter purpose it may be used in two ways:

(1) The students may participate with the linguist, under his direction, in the analysis of the language to be learned. If the linguist himself is new to the language, the students and he learn it together; if he has already studied it, they follow in his footsteps. In either case his function is that of a guide: he shows the students how to get the necessary linguistic material from the informant, leads them to infer the grammatical structure from the examples they collect, helps them to analyze and classify what they have recorded. At the end of such a course the students not only have a good knowledge of the language, but are equipped to learn any language in the world by their own efforts. Those who have once acquired this technique regard it as a priceless treasure.

(2) The linguist may study the language by himself, analyze the linguistic material in advance, and organize the grammar for presentation to his students. The informant is still necessary to act as a model for imitation, but the linguist now actively teaches instead of only guiding.

The first of these methods is indispensable for teaching those who wish to master the technique of linguistic analysis and to engage in linguistic research of their own. (It is to such students that the booklets by Bloomfield and by Bloch and Trager are most useful.) The second way is strictly speaking, a teaching method adapted to the particular language; it therefore produces faster results for those interested primarily in the given language, and is much better suited to the needs of students who are not far enough advanced to do research. It is the second method which promises to be the more widely used in teaching specific languages.

III

Since many persons have come to regard this method of teaching a particular language as superior to the traditional

methods of instruction, it may be of interest to describe some of its more important characteristics.

In the first place the teaching is done by a trained linguist, working with the assistance of a native speaker — except, of course, in the rare cases where the native speaker is a linguist himself. Two questions should be answered at this point : (1) If the linguist has learned the language, why does he need the help of a native speaker?—because not even the best grammar-book or dictionary can replace the native speaker's unique knowledge of what can be said in his language in any situation; and because students should be allowed to imitate only a native speaker's pronunciation. (2) If a native speaker, for these two reasons, must be always present, why is it necessary to have a linguist also?—because only a linguist has the technical knowledge necessary to help the students in their imitation and in their learning of the language. No one, simply by virtue of speaking a language, can describe its phonetic system or analyze and correct a foreigner's mispronunciation ; no one, simply because he is fluent himself, can present the grammatical structure of his language in such a way as to lead others to fluency by the shortest possible route. Only a linguist can do these things.

The actual teaching procedure varies according to the special requirements of the language to be taught and the experience of the linguist in charge of each course. In what follows I shall describe the procedure used for my own classes in Thai.[3]

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3. My study of Thai was made possible by a fellowship from the National School of Modern Oriental Languages and Civilizations, under the auspices of the American Council of Learned Societies. My intensive courses in this language at the University of Michigan have been sponsored by the Council's Intensive Language Program.

Other linguists, teaching other languages, would modify my practice here and there, perhaps omitting some features of it or introducing innovations of their own ; but all would probably agree on the principles that underlie the procedure.

Students in the Thai classes are first of all taught to use a phonemic notation for writing the language, so that they may concentrate on pronunciation from the very beginning. Until they are sufficiently advanced to begin the study of the traditional native system of writing, they carry on all their work with the use of this phonemic notation. This practice reflects one of the basic assumptions of our method : SPEAKING MUST COME BEFORE READING.

About half the students' time is devoted to class work of the more traditional kind, with grammatical discussion, word study, translation of Thai into English and of English into Thai, drill on troublesome points of grammar, and the like. The other half of their time is spent on drill intended to develop good pronunciation and, later on, the ability to converse in Thai. (My classes have been small. Where classes are larger, students must be divided into groups of not more than five or six for the drill work.) The drill consists of three kinds of exercises : (1) EXERCISES OF IMITATION train students to imitate exactly what they hear, so that they may be understood by native speakers ; (2) EXERCISES OF DICTATION train students to write down what they hear, so that they may improve the sharpness of their perception and equip themselves to record new words even before they have learned the traditional native alphabet ; and (3) EXERCISES OF RECOGNITION AND RESPONSE train them to understand and answer what they hear, so that they may gain experience in the actual use of the language as a means of social intercourse. All of these exercises are conducted by a native speaker (with or without the linguist's supervision), so that the students always hear the

language spoken under the most favorable conditions.

Experience has shown the three types of exercises to be so interwoven in their benefits that an improvement in one kind of skill means an improvement in the other two kinds also : as a student's pronunciation improves, so do his ability to record words in the phonemic notation and his ability to recognize and respond to what he hears.

Note that a student does not practice the pronunciation of words by himself until he is well able to do so. In the exercises of imitation he must always listen to the informant and imitate exactly what he hears, practicing each word until the informant is satisfied with his pronunciation. Later on he may attempt to pronounce words and phrases which he has not heard ; but if he flounders too much, he must return at once to the imitative process. This method may seem needlessly slow and over-careful ; but it is only by such training that a student can acquire the sort of pronunciation which any native speaker — even one who knows no other language — will understand. Imitation can hardly be overdone ; whereas bad habits formed in practicing alone may resist all efforts to correct them.

The exercises of dictation are intended to improve the student's ability to hear, not his ability to spell. In the early stages of the work the informant dictates only words which the class have already studied ; a little later he dictates short sentences containing familiar words, then sentences containing new words, and finally whole passages with old and new words mingled. In the later stages the student begins to learn how to correct his own mistakes by comparing the troublesome feature of a new word with a similar feature of some word already known. Thus, if he cannot readily identify the tone of a new word, he asks the informant to pronounce the word beside one whose

tone is known to him, and continues this process until he finds a known word whose tone matches that of the new one. By a similar procedure he can determine any phonetic feature that he meets with — the timbre of a vowel, the aspiration or non-aspiration of a consonant, and so on. When he has acquired facility in this kind of work he is on his way to competence in handling the language.

Exercises of recognition and response may begin quite early. In the first stages the informant reads Thai sentences which have already been studied in class, and the student tries to give an English translation as quickly as possible. When the student can understand through hearing everything that he has learned through reading, he has made an important forward step. Later the informant asks simple questions in Thai, to be answered by the student in the same language. In the final stage, the informant and the student engage in actual conversation ; this will of course be as simple or as difficult as the student's advancement allows.

All three types of exercise are given concurrently. When the student has become proficient in all three, he can understand a native speaker, he can make himself understood, and he can write down any word in the language, whether or not he has heard it before, in the phonemic notation which he has learned. These three skills give him not only a fair practical command of the language, but also the tools which will enable him to learn more and more of the language as readily as a native speaker does.

After the student has learned several hundred words and has acquired reasonable facility in conversation through the use of the phonemic writing alone, then — but not until then — he begins to learn the traditional system of writing. For this purpose he does not absolutely need to have achieved the

degree of competence here assumed ; but if he has achieved it, his progress in learning the native system of writing will be far more rapid. Indeed, his background knowledge of the spoken language puts him practically on the same footing with native speakers when they, as children, begin the study of their traditional writing system. Peculiarities and irregularities in the native spelling can nearly always be most easily explained through the use of the phonemic writing, so that this remains a useful tool even when the student is learning to supplant it by the traditional orthography.

IV

It has been my experience, and the experience of others teaching by similar methods, that students like to learn a foreign language in this way. They acquire a good knowledge of the spoken language, and their progress in the written language is unusually rapid as a result. Their daily contact with a native speaker, their continual efforts to understand him and to make him understand, give them a sense of reality, and the assurance that they are actually on the way, from the very start, toward practical mastery of the language as a means of intercourse with native speakers. The ability to converse in a foreign language — surely the most important single benefit to be derived from language study — is too often neglected or taken for granted. It comes only through long, laborious drill, through constant hard work; but most students are willing, even glad, to do what is required of them, because they see quite clearly — or can easily be made to see — the practical usefulness of these lessons.

Applied Linguistics in the Class-room*

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When our Secretary, George Winchester Stone, asked me last July to address this meeting on the general topic of language teaching and linguistics, it was only with considerable hesitation that I finally agreed to accept. There has been far too much loose talk recently about the application of linguistics to language teaching, and I did not wish to add to it. In some circles linguistics has turned into a sort of fad. There are those who talk of the "linguistic method" of language teaching, as if to oppose it to some hypothetical "non-linguistic method" used in the benighted past. And at meetings of language teachers, bright young things walk up to me and ask, apparently in all seriousness: "Excuse me, Professor, but would you please tell me how linguistics handles the subjunctive?" Needlese to say, I have no answers to such questions; they merely embarrass me. Linguistics is not a teaching method, but a growing body of knowledge and theory; and though it may offer helpful answers to some of the problems of language teaching, it surely does not know all the answers.

What finally persuaded me to accept Mr. Stone's invitation was a rereading of some wise words which his predecessor, William R. Parker, wrote back in 1954. In the first edition of

*One of four addresses given at the General Meeting on the Foreign Language Program in Philadelphia, 29 December, 1960.

his UNESCO booklet on *The National Interest and Foreign Languages*, Parker estimated that there were at that time some 260 persons in this country who practiced structural linguistics as against some 26,000 foreign language teachers who did not. "Commonsense suggests," he wrote, "that if the 260 have something valuable to give the 26,000, as seems more than likely, they will not soon do it by ignoring or antagonizing them, nor will the 26,000 help matters by considering themselves beyond enlightenment."[1]

Let me touch briefly on each of the three conditions which Parker said must be met if language teachers and linguists are to cooperate fruitfully. Two of them are matters of goodwill, and I shall not dwell on them further. I shall simply take it for granted that language teachers and linguists are willing to talk to each other, and that neither group considers itself beyond enlightenment by the other. The third point which Parker mentions—the fact that linguists antagonize language teachers—is not so easily disposed of. Even with the best of goodwill on both sides, these antagonisms stem from such fundamental differences in viewpoint that they will not soon disappear. I refer not to such relatively trivial antagonisms as those caused by the terminological excesses of the linguists, or by their enthusiastic exaggeration of the importance of a linguistic approach to language teaching. The deeper and more subtle antagonisms are those which arise because many of the tenets of linguistics seem to deny certain cultural values that we have long cherished. One example is

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1. William R. Parker, The National Interest and Foreign Languages, preliminary edition Washington, D. C.: U.S. Government Printing Office, 1954), p. 124. This rather sharp statement was omitted in the revised edition of 1957.

the linguists', 'infuriatingly objective approach to matters of correctness in language. Other examples will occur in the course of my remarks, and I can only hope that by pointing out the nature of their offensiveness I may help make them somewhat less offensive.

When we talk about the subject of applied linguistics in the classroom, we need to realize first of all that we are dealing with only one aspect of the language teaching problem. Language teaching in our schools and colleges is composed of at least three different elements. First, there is the language itself : its sounds and forms and structure. Since the fact that we know the language does not by any means imply that we know the best way of analyzing and presenting it, this is an area where we may indeed look to the linguist for enlightenment and guidance. Next, there is the pedagogical problem of teaching the language in such a way that our students will learn it most efficiently. Here linguistics probably has a role to play, but so also do psychology and education. Finally, there is the supremely important question of what we want our students to do with the language as they learn it. It would be sad indeed if we taught them how to speak only to find out that they could say nothing worth listening to. And here we run into the first antagonism. Our cultural tradition places the highest value of all on this third aspect of language teaching: above all else we want our students to hear and read the greatest things which have been spoken and written in the language they are studying. But linguistics has no contribution at all to make in this area; and we therefore tend to look down on it as a kind of non-intellectual technology which deals only with the mechanics of language. We scorn it as being suited only for a Berlitz-type language course, full of barbershop talk and fit for little else. And we are antagonized that the linguist thinks he can make any real contribution to language teaching. But of course he can. For the great ideas are not to be gotten merely for the asking, but only by learning

the language first. If only to get at the great ideas faster, we should exploit the technology of linguistics to the fullest.

Having first antagonized the linguists by calling them technical hacks, I must now antagonize the language teachers. As the linguist looks at the world about him, he finds that all of mankind beyond infancy can speak and understand, but that less than half of it can read and write. Looking at the languages of the world, he finds that only a small fraction of them are recorded in writing. And looking into history, he finds that mankind has been speaking and understanding for half a million to a million years, but that he has been reading and writing for less than one or two per cent of that time. From this state of affairs the linguist deduces that language must be primarily a matter of speaking and understanding, and only secondarily—and by no means necessarily — a matter of reading and writing. Many laymen and many language teachers are shocked and antagonized by such a statement. The reasons are not hard to find. Our cultural tradition places far higher prestige on reading and writing than on speaking and understanding. We may perhaps secretly admire the European waiter who speaks half a dozen languages fluently, but we reserve our public admiration for the man who reads half a dozen languages, regardless of how he may speak them. Furthermore, the great ideas which, our cultural tradition tells us, are the loftiest goal of foreign language study, are almost exclusively recorded in writing; and to tell us that such matters are "secondary" is downright insulting. Here, of course, we have fallen into a semantic trap: we tend to equate the term "primary" with "greater value," and the term "secondary" with "lesser value." The linguist implies no such thing. Besides, he is speaking of the first area of language teaching, the language itself, whereas we are thinking of the third area, that of great ideas.

We cannot deny that, within the first area of language teaching, speech is primary and writing secondary. The question which then arises is : How does this tenet of linguistics affect language teaching in the classroom ? The leading language teachers of the country have already made up their minds on this point. Our FL Steering Committee has agreed that the elementary language course "should concentrate at the beginning upon the learner's hearing and speaking the foreign tongue," and that more advanced instruction should provide "frequent opportunities for maintaining the hearing and speaking skills thus early acquired."[2] This point now seems generally accepted, and I shall not belabor it.

But the topic is not yet finished. If speech is primary and writing secondary, then there is at least a strong presumption that we should teach the writing in terms of speech. Yet most textbooks, and I daresay most classroom teachers, follow the opposite procedure : they teach speech in terms of writing. Let me give you some examples. A French textbook has the following to say about the mute *h* and the aspirate *h* : In French the letter *h* is not pronounced. The mute *h* is treated as a vowel, the aspirate *h* as a consonant. The mute *h* requires both elision and liaison ; the aspirate *h* requires neither." I shall leave it to psychologists and educationists to judge the pedagogical value of this explanation. The linguist considers it completely hindside to, precisely because it analyzes speech in terms of writing rather than vice versa. The linguist would describe the facts of speech first : "Most words beginning with a vowel sound (and note that it is a sound, and not a letter) take elision and liaison, but a few do not." And he would give examples. Only then would he discuss the quite separate problem of spelling :

2. "FL Program Policy : On Foreign Language Teaching," PMLA, LXXI, No. 4, Part 2, (September 1956), p. xv.

"Most words of the first type are spelled with an initial vowel letter, though a fair number are spelled with an *h*- ; and nearly all words of the second type are spelled with an *h*-." And again he would give examples.

One could illustrate this sort of thing almost endlessly. Most Russian textbooks, for instance, describe the language as if it had ten vowels. In actual fact it has only five vowels, but two whole sets of consonants. It has ten vowel letters ; but five of them are used to indicate that a preceding consonant is palatalized, and five are used to indicate that a preceding consonant is non-palatalized.

What harm is done by telling our students that the feminine of many French adjectives is derived from the masculine by the addition of a "silent"—*e* : masculine *grand*, feminine *grande*, and then illustrating this by saying/gra/,/grad/, where the masculine is obviously derived from the feminine by subtraction of the final consonant ? Only the psychologists and the educationists can tell us whether or not this is harmful. The linguist would of course put the matter quite differently, explaining the language first and the spelling afterwards, and noting that the two work in opposite directions. He may of course be pedagogically wrong in doing this ; but since he has a well developed theory to back him up, the burden of proof is on those who think him wrong.

Let me go on to another topic — which again, I am afraid, will antagonize many language teachers. The linguist looks at the world about him and finds that children as young as five or six handle their native language with dazzling fluency. This means that, whatever may be involved in language learning, its fundamentals can be mastered by a six-year-old. The language teacher hears this statement, and he is offended ; for where

tradition tells us that foreign language teaching is a grand and noble profession, this statement seems to place it just barely above the intellectual level of an infant. Two misunderstandings are involved here. First, though the linguist's statement applies only to the first area of language teaching, that of the language itself, the teacher reacts as though the same statement applied also to the third area of language teaching, that of great ideas. And secondly, though a child's learning of his native language is not an intellectual achievement in the usual "great ideas" sense of the word, it is nonetheless a very marvelous accomplishment which few persons can match in later life. If we regard it as such, and at the same time realize that this is only one part of language teaching, we can preserve our professional dignity, accept the linguist's statement, and get on with the business of seeing how we should apply it to class oom work. In trying to apply the statement, however, we must avoid another trap : that of assumiag that the method by which children learn a language is also suited to students of high school and college age. Such students are not children, and they will never again "learn the language as a child does," as the saying goes.

Before we try to apply the linguist's statement to language teaching in the classroom, we need to ask another question. If speaking a language is not an intellectual activity in the usual sense of that term, just what is it? Borrowing a phrase from his cousin the anthropologist, the linguist will tell us that it is yet another example of "learned and shared behavior," more akin to such examples of group behavior as customs and manners than to the intellectual activity which we usually call "thinking." Nearly all the "thinking" which a person does when he speaks is directed at what he wants to say (the content), rather than at how he wants to say it (the language). In a word, if we limit ourselves (as the linguist must) to the first area of language teaching, then speaking a language can best be described as a matter of habit. Application of this linguistic theory to classroom

work is now relatively simple. If speaking a language is a matter of habit, then we must do in class only those things which will help form habits swiftly and efficiently. For adult and semi-adult students, this will mean a certain amount of grammatical analysis, but only to the extent that it can speed up habit formation. Psychologists and educationists are the ones who can best advise us on how habits are formed. The linguist's best guess is that most of the classroom work should consist of individual and choral repetition, of carefully guided conversations, of pattern practices, and the like. Any kind of instruction which does not involve the students in some sort of habit forming activity is under grave suspicion of being a complete waste of time—assuming, of course, that we are speaking only of the first area of language teaching.

Another thing which the linguist sees when he looks about him is that what is everywhere the same objective world is structured differently in each particular language. From this he deduces that language is arbitrary and relative, rather than logical and absolute. For those of us who cherish the Western European tradition of logic in grammar, this is shocking and offensive attitude. We have felt justified in telling our students that it is not only incorrect but also illogical to say "It is me," since a predicate nominative ought obviously to be in the nominative Now the linguist comes along and tells us that every language behaves differently, and that the grammatical rules of one language cannot be expected to fit another. Where we once felt justified in conjugating the past tense of English verbs: *I saw, you saw, he saw, we saw, you saw, they saw,* the linguist now tells us that such a paradigm, in which the verb remains unchanged, is nothing more than an exercise in pronouncing pronouns. If we accept the linguist's ideas, as I believe we must, then the application to classroom work becomes obvious. We will no longer present grammar as

something universal, but cheerfully admit that Latin works one way, French another, Italian another, and so on. Furthermore, we will not present grammar as a set of rules to which the language must conform, but rather as a set of generalizations on the way a particular language happens to behave. Let me assure you that such an approach can often save the teacher much embarrassment. Socalled "exceptions to the rule" are then no longer cases where the language stubbornly refuses to behave as it should; they are simply cases where our generalizations about the language have been imperfectly formulated.

There is one more attitude of the linguist which is highly offensive to many of us. When he turns from analyzing what speakers say in their language to the things they say about their language, he tells us that he must classify most of their statements as nonsense—though he may use such more dignified terms as the "folklore" or the "mythology" of the language. Such a judgment is a direct, personal affront. Surely, if I am a sensible person and a native speaker of educated English, I must be able to make sensible statements about English, and must be able to teach it. This, at least, is the first reaction of many sensible people. But if we will give the matter a second thought, I believe we must be grateful to the linguist for his judgment. For only if he is right can there be a real profession of language teaching. If native control of language qualified any person to teach it, then our profession would be at a very primitive level indeed.

Thus far I have mentioned four fundamental components of linguistic theory, and each of them was more or less antagonizing to us as language teachers. In the remainder of my remarks I shall be less offensive. I should like to mention four recent developments in linguistics, each of which seems to have direct application to classroom language teaching. Indeed, in each of them the tables are turned, and we can say that the linguists are

"discovering" something which language teachers have long known and used though not used as effectively as they could have if they had a sound theory to back them up.

The very latest thing in linguistics is something known as "transformation grammar." Its point of departure is such phrases as the following: first, *the growling of lions* ; second, *the raising of flowers.* Here we have two phrases with the same surface structure : verbal noun plus prepositional phrase. Yet it is obvious to any speaker of English that, at a deeper structural level, these two phrases are very different indeed. The new theory explains their difference by calling them "transforms" of two different "kernel sentences" : *the growling of lions* is a transform of *Lions growl* ; *the raising of flowers* is a transform of *Someone raises flowers.* In one sense this is nothing new in grammar ; many of you will say at once that these two phrases are simply examples of the subjective and objective genitives. Nor is the concept of "transformation" new to language teachers ; probably all of us have found that the passive is most effectively taught as a transform of the active. What is new is that we see developing before our eyes a grammatical theory which makes such transforms a fundamental part of language structure. As much as transformation grammar is better developed, I believe it may have widespread application to the classroom teaching of foreign languages. To the very courageous language teacher I would even say right now: read up on transformation grammar and see whether we, with our experience in foreign language teaching, cannot make important contributions to it.[3]

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3. The basic work on transformation grammar is Noam Chomsky, *Syntactic Structures* , The Hague : Mouton and Co., 1957. An important review of this work is that by Robert B. Lees, *Language*, XXXIII (1957), 375- 408. A recent application of transformation grammar is Robert B. Lees, *The Grammar of English Nominalizations*, Publication 12 of the Indiana University Research Centre in Anthropology, Folklore, and Linguistics—International Journal of American Linguistics, XXVI, No. 3, Part II, July 1960.

Another new theory of grammar goes by the forbidding name of "tagmemics." Stated very briefly, it looks at a sentence as composed of a certain number of tagmemes or "functional segments," each of which consists of the "functional slot with its class filler." We need such a theory to allow us to say that two sentences such as *John hit Bill* and *The man at the window is buying the tickets* somehow have the same fundamental structure. Again, many of you will say that this is nothing new; this simply amounts to saying that both sentences consist of subject plus verb plus object. Nor is it new to language teachers. Tagmemic theory underlies all the pattern practice exercises which we have recently begun to find so helpful. Kenneth Pike, the chief proponent of tagmemic theory, has himself said that the tagmeme is "implicit in every practical grammar written for hundreds of years." He then adds : "It is the explicitness of the approach and the resultant rigor with which analytical procedures can apply the theory, which is basically new."[4] Up to now language teachers have been applying tagmemics more or less intuitively ; we need a better theoretical understanding of it so that we can exploit it to the full.

Still another new linguistic theory divides the vocabulary of all languages so far investigated into two rather clearly separated types: function words and content words. The favorite illustration of the two types is Lewis Carroll's Jabberwocky. Here all the function words of English have been left unchanged, but instead of content words we find only nonsense syllables.

4. Kenneth L. Pike, "Grammemic Theory," *General Linguistics*, II (1957), 35–41. Because the term gram (m) emic (spelled either way) caused confustion, Pike later replaced it by tagmemic. For the most recent discussion of tagmemic theory with reference to earlier works and applications, see Robert E. Longacre, "String Constituent Analysis," *Language*, XXXVI (1960), 63–88.

Nevertheless, the result is a poem with a perfectly clear structural meaning :

> 'Twas brillig, and the slithy toves
>   Did gyre and gimble in the wabe;
> All mimsy were the borogoves,
>   And the mome raths outgrabe.

As Alice said: "It seems to fill my head with ideas — only I don't exactly know what they are !" If, on the other hand, we follow the opposite procedure, putting in suitable content words but replacing the function words with nonsense syllables, the result is structurally quite meaningless. Though the theory of function words and content words is not yet fully worked out, it has obvious implications for language teaching. Up to now we have relied largely on frequency counts in choosing the words which we want to include in an elementary course. This new theory suggests that only content words should be chosen on the basis of frequency, and that even in an elementary course all, or nearly all, of the function words should be included, regardless of their frequency. Function words are the blood and bone of language; content words are fillers which can fit into particular types of slots. Children learn nearly all the function words of their native language at a very early age; they will keep on learning content words throughout their lives.[5]

A final new linguistic theory, and perhaps the most important one of all for language teaching, goes by the name of "contrastive linguistics." The theory assumes that, although each language possesses its own unique structure, it is not only possible to contrast two languages in some meaningful way, but

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5. On the theory of function words and content words, see Charles Carpenter Fries, *The Structure of English* (New York, 1952), especially chap. vi, "Function Words"; and Charles F. Hockett, *A Course in Modern Linguistics* (New York, 1958), index, s.v. "contentive", "functor", "Jabberwocky". Hockett uses the terms contentive and functor so as to include both words and affixes in each of the two classes.

it is also possible, by means of a contrastive analysis, to predict the difficulties which speakers of the one language will have when they try to learn the other. We language teachers have, in our daily classroom work, a marvelous opportunity to test and elaborate this theory. A few of the mistakes which our students make in learning, say German are based on false analogies within the foreign language. These are precisely the kinds of mistakes which German children also make when they learn to speak. But the vast majority of the mistakes our students make come from a totally different source : they result from carrying over into the foreign language the speech habits of English—habits of pronunciation, of morphology, and of syntax. All of us, as foreign language teachers, already know this; and yet it is a rather shocking fact that not one of us has ever analyzed the kinds of mistakes which our students make, and tried to fit them into a coherent theory. At the request of our Association's Center for Applied Linguistics, a number of language teachers and linguists are right now trying to work out analyses contrasting the structure of English with that of French, German, Italian, Russian, and Spanish. The results will certainly not revolutionize language teaching in this country. Indeed, they may tell us to go right on doing much that we have been doing all along. But there will be a difference : instead of constantly improvising, and teaching by intuition, we will have a reasoned theory to support nearly every step of the language teaching process.[6]

6. A basic work on contrastive linguistics is Uriel Weinreich, *Languages in Contact*, New York : Linguistic Circle of New York, 1953. See also William W. Gage, *Contrastive Studies in Linguistics: A Working Bibliography*, Washington, D.C.: Center for Applied Linguistics, March 1960, mimeographed. An example of a contrastive phonological analysis is Daniel N. Cardenas, *Introduction a una comparacion fonologica del espanol y del ingles*, Washington, D.C. : Center for Applied Linguistices, 1960. A textbook which applies the theory of contrastive linguistics is Dwight L. Bolinger et al., *Modern Spanish: A Project of the Modern Language Association*, New York and Burlingame : Harcourt, Brace and Co., 1960. The "substitution drills" in this text are based on the theory of tagmemics ; the "response drills" are based in part on the theory of transformation grammar. For a description of them see J. Donald Bowen "*The Modern Language Association College Language Manual Project*," PMLA, LXXIV, No. 4, Part 2 (September 1959), 20—26.

The fact that so much of our language teaching right now is done by improvisation and intuition, on a sort of by-guess-and-by-God basis, brings me to the final topic which I would like to discuss. Two years ago a colleague who will speak to us later on this afternoon, Jack M. Stein, wrote an article in which he referred to language teaching as "The Amateur Profession."[7] It is my belief that language teaching is doomed to remain an amateur profession just as long as it lacks a comprehensive theory on which to base its daily teaching practice. At the moment, the most likely source of such a comprehensive theory is the field of linguistics. This is true not because linguistics knows all the answers, but quite simply by default : no other branch of study has come forth with an equally comprehensive theory. There are among us many colleagues who have developed empirically some highly effective language teaching methods. Let us examine these methods and find out not only that they work, but also why and how they work. Let us combine the practice of our most skilled teachers with the language theory of the linguists and the learning theory of the psychologists and evolve our own theory of language learning. Only then can we lay claim to the professional status which ought rightly to be ours.

Contd.) A manual of pronunciation based on the theory of contrastive linguistics is J. Donald Bowen and Robert P. Stockwell, *Patterns of Spanish Pronunciation : A Drillbook*, Chicago: University of Chicago Press, 1960.

7. The German Quarterly, XXXI (1958), 133—137.

The Necessity for a Systematic Comparison of Languages and Cultures

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1. Introduction : Fundamental Assumption.

1. 1. The fundamental assumption guiding the preparation of teaching materials at the English Language Institute of the University of Michigan is given by Fries : "The most effective materials are those that are based upon a scientific description of the language to be learned, carefully compared with a parallel description of the native language of the learner."[1]

Comparison of English and several other languages were also made in preparation for the English textbooks of the A.C.L.S.,[2] and various articles dealing with partial comparisons of languages appear in the journal *Language Learning* as a contribution to foreign language learning research.[3]

1.2 The same assumption, that in the comparison between native and foreign language lies the key to ease or difficulty in foreign language learning, was applied to the preparation of language achievement tests by Lado.[4]

1. Charles C. Fries, *Teaching and Learning English as a Foreign Language* (Ann Arbor : Univ. Mich. Press, 1945), P.9.

2. Spoken English Textbooks, ed. Martin Joos, American Council of Learned Societies. Program in English as a Foreign Language (Washington, D.C., 1954).

3. *Language Learning*. A Journal of Applied Linguistics (Ann Arbor : Research Club in Language Learning). See Index to Vols. 1 through 5 in 5, No. 3–4 (1955)

4. Robert Lado, "Measurement in English as a Foreign Language, with Special Reference to Spanish-Speaking Adults" (Doctoral dissertation, University of Michigan, 1951). See also articles by Lado in *Language Learning* and *The Modern Language Journal*.

1.3 A practical confirmation of the validity of our assumption has come from the work of linguists who study the effect of close contact between languages in bilingual situations. They report that many linguistic distortions heard among bilinguals correspond to describable differences in the languages involved. Extensive studies have been carried out by Haugen and Weinreich in this area.[5]

1.4 Research in the psychology of language and in language learning in educational psychology has not as a rule made any conscious systematic use of assumptions of importance of the native language habits in foreign language learning. Yet there is every reason to believe that real progress could be made if such assumptions were to become part of the planning in language learning research.

1.5 Implied in Fries' assumption for effective teaching materials, and as observed in bilingual studies and in testing research, is the fundamental assumption of this book: that individuals tend to transfer the forms and meanings, and the distribution of forms and meanings of their native language and culture to the foreign language and culture — both productively when attempting to speak the language and to act in the culture, and receptively when attempting to grasp and understand the language and the culture as practiced by natives.

2. Significance for Teaching.

2.1 The teacher of foreign languages may wonder why he has to go through the painful business of comparing languages. Is it not his responsibility simply to teach a foreign language? Is it not enough that he should know that foreign language?

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5. Einar Haugen, *The Norwegian Language in America* (Philadelphia: Univ. Penn. Press, 1953). Uriel Weinreich, *Language in Contact* (New York: Publications of the Linguistic Circle of New York, 1953).

Not if our assumption is correct. We assume that the student who comes in contact with a foreign language will find some features of it quite easy and others extremely difficult. Those elements that are similar to his native language will be simple for him, and those elements that are different will be difficult. The teacher who has made a comparison of the foreign language with the native language of the students will know better what the real learning problems are and can better provide for teaching them. He gains an insight into the linguistic problems involved that cannot easily be achieved otherwise.

In practice a teacher may be called upon to apply this knowledge under various circumstances. He may be asked to evaluate materials before they are adopted for use. He may be asked to prepare new materials. He may have to supplement the textbook assigned to his class. And he will at all times need to diagnose accurately the difficulties his pupils have in learning each pattern.

2.2 *Evaluating the language and culture content of a textbook*. On the surface, most textbooks look pretty much alike. Publishers see to it that their books look attractive and that the titles sound enticing. That is part of their business. If a teacher is professionally trained, however, he will be able to look beyond attractive illustrations and handsome printing and binding.

He should be able to see whether the book presents the language and culture patterns that form the system to be studied, and does not merely list disparate items from here and there. He should also be able to discern whether the book gives due emphasis to those patterns that are difficult because they are different from those of the native language of the students.

Some books, advertised as panaceas for easy learning of a foreign language, simply present a few patterns that are similar

to the native language and spend a good many chapters, sometimes an entire volume, on them. The untrained teacher and student may get the impression that the book does simplify the learning of the language. But in reality it does not teach the foreign language; it merely entertains teacher and student in easy but unproductive activity. That weakness is immediately laid bare by comparing the two languages.

Textbooks should be graded as to grammatical structure, pronunciation, vocabulary, and cultural content. And grading can be done best after the kind of comparison we are presenting here.

2.3 *Preparing new teaching materials.* More and more the teacher is faced with the need to prepare textbooks and other teaching materials that are up to date and meet the needs of the particular students he is interested in. The most important new thing in the preparation of teaching materials is the comparison of native and foreign language and culture in order to find the hurdles that really have to be surmounted in the teaching. It will soon be considered quite out of date to begin writing a textbook without having previously compared the two systems involved.

Other advances in techniques of presentation of language and culture should not be neglected, but the linguistic comparison is basic and really inescapable if we wish to make progress and not merely reshuffle the same old materials.

2.4 *Supplementing inadequate materials.* Commonly, the teacher finds that he is given an assigned textbook that he finds inadequate both as to linguistic and cultural content. The teacher who has systematically compared the two languages will be able to prepare supplementary exercises on those patterns which are important or difficult and have been overlooked or treated inadequately in the book.

2.5 *Diagnosing difficulties.* The teacher will at all times in working with his students be faced with the need to diagnose quickly and accurately the problems troubling a student. Much misinformation and many misleading explanations can be and are given to students in the attempt to help them. Knowing not only what the pattern is, but knowing precisely what feature in that pattern is troubling the student and what different feature he is substituting can lead to a simple hint or pointer that may solve an otherwise baffling situation. The professionally trained teacher should notice not only a "foreign" accent or an "incorrect" form but a clear-cut, specific distortion of a sound, construction, or cultural pattern.

3. Significance for Testing.

3.1 A major advance has already been achieved in tests of English as a foreign language, largely as a result of the linguistic comparison of English and the native language of the student. With the results of such a comparison we know pretty accurately just what the learning problems are, and we can concentrate our ingenuity on how to test them. It so happens that language problems are very stable and specific, and we can observe our results rather well.

Language testing in the past had tended either toward rules and lists of words or, as a reaction against that extreme, toward another extreme : reading of connected passages, writing a composition, conversing, or listening to connected materials, without regard to their language content. The testing of rules and lists of words did not have many wholehearted friends, in the United States at least. It was already out of fashion, and rightly so, if for no other reason than because knowledge of rules and memorization of lists of words seemed to bear no relation to being able to speak the language and understand it or even to read it.

The reaction against rules and lists of words turned to what seemed like a "common sense" solution: the use of connected materials. The failure in the use of these lay in disregarding their language content. The number of passages and compositions that could be expressed in language are infinite, and it is easy to find a passage or a composition topic in which one might do badly even knowing the language. How well would the average reader do if asked to write a five-hundred-word composition explaining the theory of relativity even in his native language? How well would he understand a professional lecture on that topic in that same language?

The advance in English language testing came not from connected material but from concentrating on the language problems as they actually are. And we get closest, to the language problems by systematic comparison of the native language and the foreign language. The alternative attempt, to find valid problems by the statistical treatment of connected material which is not chosen linguistically, does not seem productive. It will tend to leave out problems that are important. It will tend to include problems which are not properly language. And it involves elaborate tabulation of large amounts of materials that could be avoided. Statistical treatment has its place in the refinement of the test, not in the selection of language problems.

The application of linguistic comparison to testing seems a most promising field. There is little doubt that the results will be rewarding. The application of the techniques of linguistic comparison to cultural comparison is now being explored and has already shown positive results for testing of cultural understanding.

3.2 *Progress in testing pronunciation.* Nowhere is there a more dramatic case of progress in language testing than the one

which is taking place in testing pronunciation. In less than five years the testing of pronunciation in English as a foreign language changed from the realm of intangibles to become the easiest, most accessible area of language testing. And this change is directly connected to the application of phonemic linguistic comparison to the selection of the problems to be tested.

We used to talk in vague terms about foreign accent, comprehensibility, amusing errors in pronunciation, and the like, or we avoided the problem of testing pronunciation altogether. We can now test the entire sound system of a language in a test of reasonable size, and we can score the test objectively. We can test the student's perception of the significant sound contrasts of the language through his comprehension of carefully chosen sentences. We can test that preception by asking him if two sentences he hears are the same or different. We can test his production of the significant sounds by forcing him to utter carefully chosen sentences. And we can test his pronunciation indirectly by asking him to say whether certain sounds whose symbols are omitted in a printed test are the same or different to him.

These techniques for testing pronunciation may seem the real contribution, but the fact of the matter is that they could not have been devised if we did not know quite specifically what problems we are trying to test. And even if the techniques alone had been devised, they would remain pretty ineffective unless we were able to sharpen them to get at the pronunciation problems of our students.

3.3 *On grammatical structure.* Had the study of grammar remained a matter of memorizing rules of artificial correctness, or had it remained a matter of arguing over this or that expression as correct or incorrect, there would not be any point in comparing two grammatical structures for testing purposes.

Grammar as grammatical structure — as patterned elements of speech that convey meanings in a language — permits a new view of the testing of grammar. We do not test the student on the correctness of this or that phrase. We test him on his comprehension of the grammatical meaning of the sentence, or we test his ability to express a grammatical meaning through the patterns of the foreign language.

The view of grammar as grammatical structure opens the way to a comparison of the grammatical structure of the foreign language with that of the native language to discover the problems of the student in learning the foreign language. The results of such a comparison tell us what we should test and what we should not test, it helps us devise test items and techniques that also look quite acceptable from a common-sense point of view, and — this is the important consideration — we can actually test the control of the language on the part of the student. We have already devised techniques involving sentence comprehension, continuing a conversation, and reconstructing incomplete sentences that actually bring out specific problems in mastering the grammatical structure of English.

3.4. *On vocabulary testing.* The vocabulary of a language is inadequately represented by any list, even if it is a frequency list. Some words are used primarily for grammatical functions, others are used as substitutes for other words, and all have various meanings and uses. Because of the large number of words in any language, we have to select a sample for testing; we cannot use all of them. And a sample will not be valid unless the various kinds of words are adequately represented.

Now, the moment you select a random vocabulary sample in a foreign language you immediately discover that some words will be easy because they resemble native-language words, while others will present various kinds of difficulties because they

differ from the native language in various ways. We can, therefore, make a further selection of the vocabulary to be used in a test by comparing it with the native-language vocabulary of the students. The result will be a more compact, more effective test through selection of words that are representative of the vocabulary difficulties that our student will find and through selection of those features of meaning that will be most revealing.

3.5 *Cultural understanding.* The idea that we might be able to test the understanding of a foreign culture objectively seems impossible to most people today. We know so little about the structure of our own culture, let alone that of a foreign one. And how can you compare cultures anyway ?

Even though this is virtually a virgin field, we have already been able to describe specific patterns of behavior in a given culture and through comparison with the native culture of the student we have discovered that there are certain misunderstandings that take place again and again. Good experimental test items have been worked out from the information yielded by that partial comparison of cultural behavior, and we have every reason to believe that much more complete testing of cultural understanding can be carried out with present tools.

4. Significance for Research.

The same error that held back progress in language testing—that is, the assumption that any sample of a language represents the learning problems for that—language—is holding back progress in research on the psychology of language learning. Not knowing what the learning problems are, experimenters adhere only to the externals of experimental design, and their results are either invalid or meaningless. How can we design a meaningful experiment on the effectiveness of an oral technique if we do not know specifically what the student

is to learn, and what he already knows because it is the same as in his native language ? Major experiments in recent years have proved inconclusive because the experiments made no distinction between those elements of the language that really had to be learned and those that did not. Simply speaking some sentences and checking comprehension does not ensure coverage of what the student has to learn, and certainly two sentences are not linguistically the same simply because they rank the same in difficulty.

Lacking specific understanding of the language problems that merit research, some psychologists have taken refuge in mass experimentation. If we use hundreds or thousands of subjects we average out any inequalities in our data, they argue. The sad result may be that they also average out the very differences that would give the information desired. And since mass experiments are not possible without major financial support, the great possibilities of individual research are discouraged or even lost.

By using the results of linguistic and cultural comparison of the native and the foreign languages and cultures, we can pinpoint our research problems, and individuals can carry out highly significant and sorely needed experiments singlehanded.

5. Significance for General Understanding.

A good-hearted person, anxious to help toward the unification of mankind, wondered if this business of comparing languages and cultures did not tend to divide. Was it not better to ignore the differences, she thought. Were we not all the same fundamentally ?

Certainly I believe that we are all one flock, that we are the same fundamentally. But because human personality has evolved a variety of ways to live, ways that we call cultures,

we constantly misinterpret each other across cultures. If we ignore these cultural differences we will misjudge our cultural neighbors — as we constantly do at present—for a form of behavior that to them has one meaning may have another one to us. And if we do not know of the difference in meaning we will ascribe to our neighbors the intentions that the same behaviour would imply for us, and would pass on them the same judgment as on our confreres. In fact, I am afraid that we do exactly that in most cases at present.

If, one the other hand, we know that an item of behavior has a different meaning in the other culture we will not misunderstand. And we will have chance to understand ourselves and what we do much better as a result. We will be able to establish genuine habits of tolerance, rather than naive good intentions that crumble the first time our cultural neighbor does something which is perfectly all right in his culture but strange or misleading in ours. In visiting a foreign country we will actually be able to enter into its life and understand and be understood.

Again, in the realm of language rather than that of culture as such, the harm that we do our students by not teaching them a foreign language or by teaching it as if it were just different words from those of our own language lies in the false idea they will hold of what it means to learn a foreign language. They will never be ready to struggle to pronounce things in different sound units, different intonation, different rhythm and stress, different constructions, and even different units of meaning unless they realize that this is exactly what's involved in learning a foreign language, and that although learing those things will require effort, often dull and uninteresting, the rewards for the effort will be great.

We have explored some of the many contributions that systematic comparison of native and foreign language and culture can make to education and research. The following chapters present working techniques to carry out specific comparisons of two systems of pronunciation, grammatical structure, vocabulary, writing and cultural behavior.

Teaching and Learning a Second Language*

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Language is speech—the meaningful sequences of sounds produced by human vocal organs. It's a system of sounds and sound patterns with act as signals to convey meaning among members of the same speech community. There are more than five thousand languages spoken by different language communities in the world today. Every language is a marvellous system of structured communication. Each language is unique in the arbitrary selection of its basic sounds, word patterns and structural patterns. Of course, some languages are more similar or less different from one another as compared with others; for example, Urdu and Persian, and Bengali and Panjabi are more similar to each other than for instance, Urdu and Chinese or Sindhi and Russian. But no two languages of the world use the same sound and structural patterns. For example, Arabic has no /p/ sound, so an Arabic speaker will substitute the nearest sound /b/ and say "blease" for English "Please" and "bani" for Urdu "pani". French doesn't have /t/ and /d/ sounds so a Frenchman will say "A beauTiful garDen" for the English utterance "a beautiful garden". Japanese doesn't have a meaningful contrast between /r/ and /l/ sounds, so a Japanese speaker will confuse the two sounds and say quite innocently: "She is eating flied lice" for "She is eating fried rice". It's a common observation that Bangali speakers confuse /j/ and /z/ sounds in words like /bajar/ for /bazar/ and /jamana/ for /zəmana/. The reason is that even though both /j/ and /z/ sounds occur in Bengali the two sounds and interchange in the language

without causing any difference in meaning, whereas the two sounds clearly contrast in Urdu causing change in meaning. Pashto does not have the /æ/ vowel sound as in English "man", "language" and "bag". So a Pashto speaker will substitute the nearest vowel sound /e/ as in horse's "mane".

On the level of grammatical structures, the problems are even more interesting. For example, all Urdu and Panjabi words are either grammatically masculine or feminine and this division is completely arbitrary. For instance, both /daṛhi/ and /mūch/ which are typically masculine phenomena, are grammatically feminine in both Urdu and Panjabi. /pani/ and /həva/ are both masculine for equally arbitrary reasons. There is in no such gender distinction in either Bengali or Pashto resulting in amusing sentences like a Pashto speaker saying : /əccha ləṛki jata hæ/ for /əcchi ləṛki jati hæ/ or a Bengali lady saying : /ab mæ jata hū / instead of /əb mæ jati hū/. In Urdu, Panjabi and Bengali, questions are most commonly formed by putting an end-rising intonation in a normal statement structure. For example, /əccha ləṛka aya/ is a statement but /əccha ləṛka aya/ becomes a question and /vo cəla gya/ becomes a question when spoken with the end-rising intonation /vo cəla gya/. On the other hand, English uses commonly the change in word order to contrast a statement with a question. For example, *He is playing* is contrasted with *Is he playing* and *He is a teacher* is contrasted with *Is he a teacher*. All have the end-falling intonation and the contrasting signal is the verb following a noun in a statement and the verb preceding the noun in a question. The result is that most Pakistanis tend to ask questions in English by transferring the end-rising intonational habits of their first languages. They will tend to say : He is play | ing for Is he play | ing and He is a tea | cher

for Is he a te | acher. Both He is playin | g and He is a tea | cher are special types of question patterns in English showing surprise that the person concerned is *playing* when he should be doing something else, say *working* and that he a is a *teacher* when he might as well be a *doctor* or a *businessman*. Again, in Urdu utterances the adverb always comes before the verb as in /vo tez b aga/ or /vo acc^{h}i təre k^{h}ela. In English the adverb always comes after the verb, for instance *He ran fast* or *He played well*. The result is that an Urdu speaker speaking English will tend to transfer the structural pattern of his own language and say: *He fast ran* or *He well played.*

I have presented these illustrations to show that a person always transfers the sounds and structures of his first language— the scientific term used for the mother tongue of the learner, in learning a second language, the linguistic term used for any language other than the first language of the learner. The modern linguist recognises this fact and builds upon it the latest theory of Comparative Structural Approach in language learning and teaching. He knows that whereas learning the first language is a simple process of establishing new habits, learning a second language is forming a new set of habits against a set of older habits. Some of which may be similar, while others will be different, both in form and in distribution. This will cause several teaching and learning problems — some of which will be simple to overcome, while others will be hard to bring under control. Therefore, he proceeds to compare the sound system and the structural system, vocabulary, writing system and the cultural system of the first language of the learner with that of the second language and accordingly helps in preparing scientific teaching materials. In teaching and learning the second language the first phase necessitates the receptive understanding and oral production of its sound system. The second phase is the control of its grammatical structures. Vocabulary must be restricted to the minimum to facilitate a good control of the sounds

and the structures, so that their recognition and production can become a matter of habit. In other words, a person can be said to have learnt a language when within a limited vocabulary, he has made the understanding and production of its sound system and its structural system, a matter of habit with him and he experiences no difficulty in understanding or making himself understood by the native speakers of that language. In this sense, every one of us is said to have learnt our first language by the age of five. It has been experimented and proved that this control or mastery over a second language can be achieved by properly motivated students in about three to six months time if the teaching materials and methods are in line with modern linguistic theory and practice.

The study of modern linguistic science is of great importance for a multilingual country like ours, where the teaching and learning of first languages as well as of second languages is far from satisfactory. Several countries of the world have adopted modern linguistic view points resulting in remarkable economy of time, money and energy in language teaching and language learning.

The Pakistan Commission on National Education has recognised the great and urgent need of reorganizing and overhauling all languag learning and language teaching programmes to bring them in line with modern linguistic theory and practice. In this connection, I would like to suggest the setting up of Departments of linguistics at all national universities of Pakistan so that the most up-to-date knowledge on the subject is taught and learnt in the country as the most essential requirement for improving the

teaching and learning of not only English which is getting maximum attention at present but also of all Pakistani and foreign languages. The Linguistic Research Group of Pakistan has taken the lead in initiating research in this direction but it is just the beginning of building up a worthy tradition of Pakistani Linguistics.

**A talk broadcast from*
Radio Pakistan, Rawalpindi,
June 1963.

Teaching Bengali to Urdu Speakers

PROF. AFIA DIL
Linguistic Research Group of Pakistan

o. Introduction

I. Problems of Pronunciation

II. Problems of Vocabulary

III. Problems of Structures

IV. Problems of Writing

V. Problems of Culture

VI. Concluding Remarks

o. In December 1961, I presented a paper on *Teaching Urdu to Bengali Speakers*, in the First All-Pakistan Urdu Tadrees Conference. That paper as well as the present one are based on the structural comparison of Lahore Standard Urdu and Dacca Standard Bengali analysed respectively by Prof. Anwar S. Dil and the author of this paper. The basic theory of teaching and learning a second language is the same as presented in my earlier paper : (a) Teaching materials are more important than teaching methods, (b) Scientific teaching materials are based on a systematic structural comparison of the second language and the first language of the students on the levels of the sound systems, vocabulary, structural systems, writing systems, and cultural

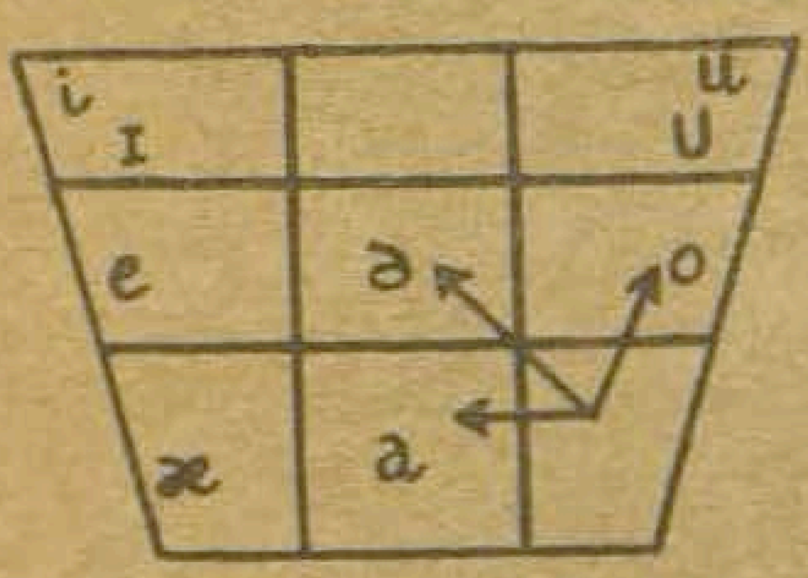
systems, (c) The dissimilarities between the two languages will determine the different levels of problems of teaching and learning a second set of language habits against an already formed set of habits of the first language, (d) Language is *speech*. Its comprehension and production will be taught and learnt by the most economical and effective method of providing model speech for imitation and repitition through teacher-student and student-student dialogue and pattern practice, till the control of the structures, with near-native pronunciation, becomes automatic, (e) The student will be said to have learnt the second language when within a limited vocabulary he has mastered its sound system and the structural system so as to understand and make himself understood by the native speakers in common everyday situations (f) Reading and writing will follow the oral control.

I. A comparative study of the phonemic systems of Urdu and Bengali shows that Urdu has similar sounds for all the consonant sounds in Bengali, though the frequency of occurrence of these sounds varies in the two languages.

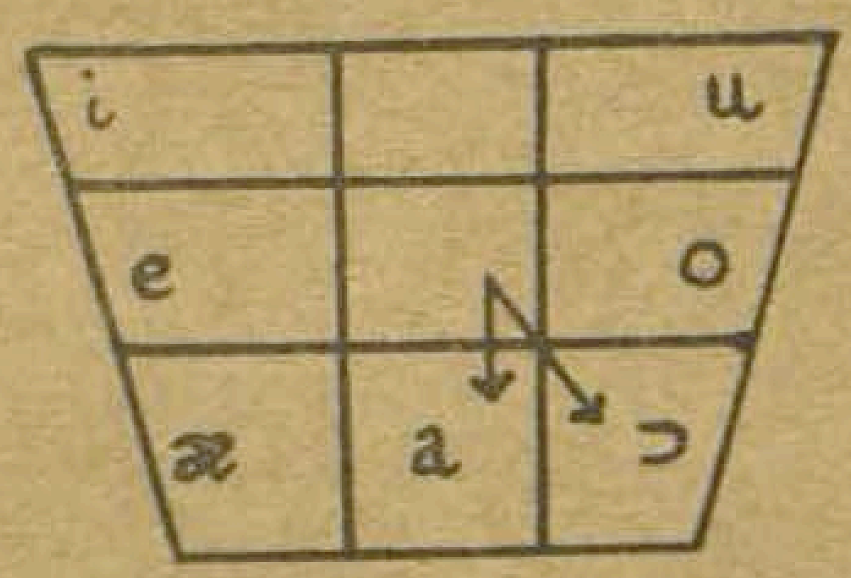
There are seven vowel phonemes in Bengali and nine in Urdu, but these nine vowel sounds in Urdu have only six vowel sounds similar to those in Bengali—the low back vowel sound /ɔ/ as in English /ɔl/ (all), or in Bengali /p^h ɔ l/ (fruit), is absent in Urdu except in diphthongs in some dialects. As a result, all the Bengali words having /ɔ/ initially, medially or finally, will be a pronunciation problem for Urdu speakers. Moreover, the general characteristic of a Bengali vowel sound is that it is enlongated in monosyllabic words, e.g. the vowel sound in Bengali /din/ (day) will tend to be longer than the initial vowel sound in Bengali /dinguli/ (days). This tendency of enlongating a vowel sound in monosyllabic words is not noticeable in Urdu. Urdu, on the other hand, has two phonemes : /ɪ/ and /i/ as in /mɪl/

(meet) and /mil/ (mile). The frequency count of the vowel sounds in Urdu shows that the most frequent vowel sound in Urdu is the mid-central sound /ə/. As a result, an Urdu speaker learning Bengali will tend to substitute /ə/ for the Bengali sound /a/, *e.g.* /əmər/ for /amar/ (mine) and /əmader/ for /amader/ (ours). For the Bengali sound /ɔ/, which is not used in Urdu, an Urdu speaker will tend to substitute /o/, /ə/ or /a/, as in /onek/ for /ɔnek/ (many), /rəŋ/ for /rɔŋ/ (colour), and /bak/ for /bɔk/ (crane).

Urdu



Bengali



There are a number of words which have similar forms in Bengali and Urdu. Whether these words are Urdu or Bengali in origin, is of no concern for the purposes of the present paper. It is important to bear in mind that when an Urdu speaker speaks Bengali and uses the 'Urdu pronunciation' of Bengali utterances, he will be said to have mispronounced them. For example, the Urdu word : /ərz/ (request) is pronounced as : /arɔj/, in Bengali. An Urdu speaker must use /arɔj/ and not /ərz/ when speaking Bengali, otherwise it will be a case of mis-pronunciation. Similar would be the case with :

Bengali	*Urdu*	*Meaning*
/k^h ɔbor/	/xəbər/	news
/k^h andan/	/xandan/	family

Bengali	*Urdu*	*Meaning*
/mejaj/	/mɪzaj/	mood
/gorib/	/ɣərib/	poor

In Bengali there is no phoneme /z/. There is a similar sound which is an allophone of /j/ in certain distributions. As a result, Bengali speakers tend to substitute *z* in place of *j* in Urdu words and *j* for *z*. This fact causes confusion for Urdu speakers learning Bengali. The force of the speech habits of their first language causes friction when they are trying to substitute a new set of habits while speaking Bengali. Their insistence on speaking such words with Urdu pronunciation makes them 'mispronounce' them so far as Bengali speech is concerned.

A comparison of the syllable patterns of the two languages shows that there are more syllable structures in Bengali than in Urdu. The patterns of syllables are :

(V represents Vowel and C represents Consonant)

Bengali			*Urdu*		
1. V	/e/	(this)	1. V	/a/	(come)
2. V͡V	/ei/	(this)	2. V͡V	/ao/	(come)
3. VC	/k/	(one)	3. VC	/ek/	(one)
4. CV	/ki/	(what)	4. CV	/ja/	(go)
5. CVC	/jal/	(net)	5. CVC	/jal/	(net)
6. CCV	/sri/	(beauty)	6. CCV	/kya/	(what)
7. CV͡V	/jao/	(go)	7. CV͡V	/jao/	(go)
8. CCVC	/pran/	(life)	8. VCC	/Umr/	(age)
9. CCCV	/stri/	(wife)	9. CVCC	/jɪsm/	(body)
10. CCV͡V	/prae/	(about)			

The first seven syllable structures in Urdu and Bengali, as shown above, are similar. These patterns, therefore, will present no teaching or learning problem for an Urdu speaker or a Bengali speaker in learning each other's language. But the last three patterns of Bengali: CCVC, CCCV and CC$\widehat{VV}$, will be learning problems for an Urdu speaker. We have shown above CCV as a syllable structure in Urdu but our analysis shows that there are only a very limited number of Urdu syllables which have this structure—including a number af syllables having 'y' which is a semi-vowel, counted as a consonant. In some dialects of Urdu this syllable structure does not appear at all. It may, therefore, be taken that CCV pattern of Bengali will also be a problem area. This area needs great caution because there will be some initial consonant clusters in Bengali which will be very hard to bring under control by an Urdu speaker. There are a fairly large number of initial consonant clusters in Bengali; though they are mostly used in '*Shuddho Bhasha*.'

1. Voiceless stops + /I/ or /r/ :

/pl/	/plabon/	(flood)
/p^h l/	/p^h lanel/	(flannel, loan word)
/pr/	/priyo/	(dear)
/tr/	/tra S/	(fear)

[/S/ represent *sh* sound as in English *bush*]

/ṭr/	/ṭrak/	(truck, loan word)
/kl/	/klanto/,	(tired)
/kr/	/kripon/	(miser)

2. Voiced stops + /l/ or /r/ :

/bl/	/blauj/	(blouse, loan word)
/br/	/broto/	(aim)
/dr/	/drobbo/	(article)
/gl/	/glani/	(heaviness of mind)
/gr/	/gram/	(village)
/b^h r/	/b^h ranti/	(mistake)

3. Sibilant /s/ + other consonants :

/sp/	/spoSto/	(clear)
/st/	/stɔbdho/	(still)
/sp^h /	/sp^h otik/	(crystal)
/st/	/st^h ɔbir/	(superannuated)
/sk/	/skɔnd^h o/	(shoulder)
/skste/	/sk^h ɔlon/	(fall)
/sl/	/sleS/	(mockery)
/sr/	/srom/	(labour)
/sn/	/snan/	(bath)

4. Other clusters :

/nr/	/nripo/	(king)
/mr/	/mrito/	(dead)
/mr/	/mlan/	(dull)

5. Clusters of three consonants :

/spr/	/spriha/	(will, decree)
/str/	/stri/	(wife)
/skr/	/skru/	(screw, loan word)
/spl/	/splisto/	(crushed)

II. Generally speaking, people confuse the learning of a language with the learning of words or vocabulary items, because the mastery of this aspect of a first language is always more conscious and perceptible than say the mastery of the basic sounds or structures. Urdu and Bengali are both members of the Indo-Iranian family and are spoken in the Indo-Pakistan sub-continent by people who have always had very close relations, so the two languages have borrowed very freely from each other. This is both an advantage and a disadvantage for a speaker of one language learning another. The problems can be broadly classified as follows :

(*a*) When both Bengali and Urdu have a vocabulary item having nearly the same form, the same meaning and the same distribution, in the two languages, there is no problem at all—no teaching or learning is necessary in the case of such cognates. For example, /pani/ (water), /rat/ (night).

(*b*) When the vocabulary item is typically Bengali, the problem is of learning a new word, which involves a simple process of learning a new thing. For example, /pukur/ (pond), /gac^h / (tree).

(*c*) When both Bengali and Urdu have a lexical item having the same meaning and distribution but there is difference in the form of the word in the two languages, the problem will be rather complex because the learner will tend

to carry over the form of the word in his first language and thereby experience the difficulty of first learning to ignore the form in his first language while speaking the second language, and secondly, to learn the different form in the second language. For example, /asman/ (sky), / zəmin/ (earth), /kaɣəz/ (paper), and /roṭi/ (bread) are vocabulary items in Urdu which except for differences in forms, have the same meaning and distribution in Bengali. It is important for an Urdu speaker learning Bengali to learn to say /aSman/ for /asman/, (jɔmin/ for /zəmin/, /kagɔj/ for /kaɣəz/ and /ruṭi/ for /roṭi/, in Bengali speech, otherwise he would be said not to have learnt to pronounce the Bengali words properly.

(*d*) When a word has similar form and same meaning but different distribution in the two languages, the problem will be for a student to learn to restrict himself in the use of the word to the distribution in the areas that are common to both languages and to learn the new areas of distribution in the second language and to unlearn the use of the word in the areas where the second language has no distribution as compared with the first language. For example, the Urdu word /əmmā/ (mother) has, for instance, the distribution to mean 'an old woman'. Bengali uses the word primarily to mean 'mother' and secondarily to mean 'daughter'. Whereas there will be no problem regarding the meaning of 'mother' in the two languages, a Bengali speaker will find it difficult to adjust to the meaning of 'an old woman' in Urdu, as much as an Urdu speaker will consider it 'strange' to address his 'daughter' as his 'mother'.

The Urdu word /kəmiz/ (shirt) has its Bengali counterpart /kamij/ but it has a limited distribution in that it refers only to shirts worn by ladies. Therefore when an Urdu male speaker says : /amar kamij kot^h ae/, it would sound strange to a Bengali speaker, even if the pronunciation etc. is all correct in this utterance.

(e) When two words have similar forms but different meanings, they would cause serious learning problems. Special attention will have to be given in teaching and learning such 'false friends'. For example, Urdu /dərya/ means 'river', /mez/ means 'table', /g^hər/ means 'house', /mat^ha/ means 'forehead', whereas in Bengali /dorya/ means 'sea', /mej/ means 'floor', /g^hɔr/ means 'room', /mat^ha/ means 'head'. /əpni/ in Urdu means 'ones own' but in Bengali /apni/ means 'you', therefore, this word is a very hard one to master on the part of Urdu speakers learning Bengali. I have observed that Urdu speakers invariably tend to substitute /apni/ in place of /ami/ meaning 'I'.

III. A comparison of the structural patterns of Bengali and Urdu shows that both the languages have the same over-all classification of different types of utterances : a) Greetings, b) Calls, c)Requests and commands, d) Questions, and, e) Statements. Also both languages have similar parts of speech : Noun, Verb, Adjective, Adverb and Function words. Word order and inflections both play a large part in the structural meaning of utterances and in both the languages, the general pattern of a statement is : Noun followed by Verb.

Urdu : /mæ̃ne Us laṛke ko bohət ḍāṭ ā/ (I scolded that boy very much)

Bengali : /ami Se c^h eleke k^h ub Suniechi/

The verb comes at the end of utterance ; the adverb precedes the verb ; the object follows the subject ; and the subject as a 'performer' starts the utterance.

But there the similarity ends. For an Urdu speaker there will be no change in the main verb form if we change the person of the subject. For example,

/həm/ (we) /tUm/ (you, singular or informal) /ap/ (you, plural or singular honorific) /Us/ (he) /Un ho/ (they, honorific he /mæ/ (I)	ne Us lərke ko bohət dāta/

The form of the verb will remain unchanged if the time referred to remains the same. But in Bengali, the verb will change its form with the change of person—though not with number. For example,

First person :	/ami	Se c^h eleke	k^h ub	Suniec^h i		/
	/amra	,,	,,	,,	,,	/
Second person :	/ tumi	,,	,,	,,	Suniech ^{h} o	/
	/tumra	,,	,,	,,	,,	/
Third person :	/Se	,,	,,	,,	Suniec^h e	/
	/tara	,,	,,	,,	,,	/

The verb forms will be inflected for tenses :

/amra / /ami	Se c^h eleke k^h ub	Sunabo	Suniec^h ilam/
/tumi / /tomra	,, ,,	Sunabe	Suniec^h ile/
/Se / /tara	,, ,,	Sunabe	Suniec^h ilo/

The verb forms are inflected in Urdu as well but because the inflection patterns are different in Bengali, the Urdu speaker is often confused in the use of the right Bengali inflections. In my experimental classes I have repeatedly heard Urdu speakers say /apni Sonabo/ for /ami Sunbo/ and /tumi Sunabo/ for /tumi Sunabe/.

The negative statements and questions offer a stubborn problem to Urdu speakers. In Bengali statements and questions the negative function word always comes at the end of the utterance, and whenever it changes its position it causes a change in meaning. For example,

/Se porte pare na/	(He can not read)
/Se na pare porte/	(He doesn't even know to read besides many other things)
/Se prote na pare/	(Even if he can not read ......)
/Se na porte pare/	(He may not read)

In Urdu, the negative function word always comes before the verb, except when expressing stylistic shades, and an Urdu speaker, therefore, while making negative statements in Bengali tends to put the negative function word before the verb and not at the end of the utterance, resulting in a definite change in meaning. Moreover, the Urdu negative function words do not change their forms with the change of tenses as is the case in Bengali. For example,

/ami jani na/	(I do not know)
/ami jani ni/	(I did not know)

The correct use of /na/ and /ni/ to correlate with different tenses is a difficult problem for Urdu speakers.

The basic question pattern in Bengali is no problem because its Urdu counterpart is more or less similar. For example, Urdu /vo gya/ (He went) with an end-falling intonation is a statement which becomes a question when it is spoken with an end-rising intonation. Similarly, /Se gælo/ (He went) also becomes a question when spoken with an end-rising intonation. In both Urdu and Bengali the basic statement pattern : Noun followed by Verb with an end-falling intonation, becomes the basic question pattern : Noun followed by Verb with an end rising intonation.

IV. The Bengali writing system is perhaps the most serious psychological barrier for Urdu speakers in learning Bengali. Bengali does not use the Arabic script and because of the historical fact of the closeness of its script to the Devnagari script, it has earned a sort of prejudice against itself. In fact, I have often heard it said that Bengali is a Hindu language. This is wrong ; because no language is 'Muslim' or 'Hindu' or for that matter 'Christian' or 'Buddhist'.

An Urdu speaker will find it hard to learn Bengali script as a result of such prejudices, unless he guards himself against them. After this is done it remains simply a matter of learning to identify, in the case of reading, and reproduse, in the case of writing, a set of accepted symbols for the sounds and sound patterns of Bengali. This process can be made very simple on the basis of research in the field of Graphemics of Bengali, conducted by the author, and used in the experimental class in which only six hours of work enabled the students to read elementary books and write simple utterances. The fact that Urdu script is so different from Bengali script is no problem ; in fact, it makes the learning process a

simple one with no interference whatsoever from the writing system of the first language of the learner.

V. Any language can be said to have been taught and learnt properly only if the learner has acquired sufficient understanding of the cultural pattern of that language community. It is commonly observed that a lot of embarrasment, confusion and misunderstanding results simply because of using a word or an utterance in the second language, without a proper knowledge of its socio-cultural import. Scientific language teaching and learning must take into account this very important area which has not so far received the attention of text-book writers and teachers. For example, Colloquial Bengali does not have a word for /SUkriə/ (Thank you); /dʰ ɔnnobad/ conveying the same meaning in Bengali is restricted in its use to written language or very formal speech. This does not mean that Bengali speakers do not have any concept of expressing thanks in their culture. They do it in other ways than its expression by a word. In Urdu, on the other hand, words like /SUkriə/ or /mɪhrbani/ have a fairly high frequency of occurrence. It is inevitable, therefore, that an Urdu speaker will consider Bengali speakers rather *thankless*, and a Bengali speaker will reciprocate by thinking that Urdu speakers are unnecessarily *thankful*. A good learner of a second language is one who is a *student* and not a *judge* of the peculiarities of the second language and culture.

Again, /hã/ in Urdu means 'yes' but you use the word /ji/ to show politeness and respect to the speaker or even to imply your own cultural sophistication. It would be considered very rude of a person if says /hã/ to his parents or his seniors in which case /ji/ is a must. But in Bengali culture /hã/ has the total meaning covered by both /hã/ and /ji/ in Urdu culture. This often results in a lot

of embarrasment and misunderstanding when a Bengali is speaking Urdu. An Urdu speaker learning Bengali can get along with his /ji/ quite well but it is important for him to learn to accept /hã/ as equally polite response in his conversation with a Bengali speaker.

VI. These observations have been presented in this form primarily with a view to introduce a new approach to the problem of teaching and learning Bengali in Urdu speaking areas. This presentation is purely of an introductory nature and presents only a few items from the materials being prepared jointly by Prof. Anwar S. Dil and the author of this paper. It is hoped that the publication of our research should provide a sound linguistic basis for writing new textbooks, teachers manuals and the preparation of other materials necessary for teaching Bengali to Urdu speakers and Urdu to Bengali speakers. At the moment the pace of our work is very slow because we do not have facilities to undertake it as a full-time research project. Our research has obvious possibilities of developing into a big undertaking for preparing teaching materials for teaching any second language to Bengali and Urdu speakers in Pakistan and teaching Urdu and Bengali, the two national languages of Pakistan, to speakers of any other language. We would like to invite all interested to extend their co-operation for developing this modest undertaking into a worthwhile project.

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APPENDIX I

Linguistic Research Group of Pakistan

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